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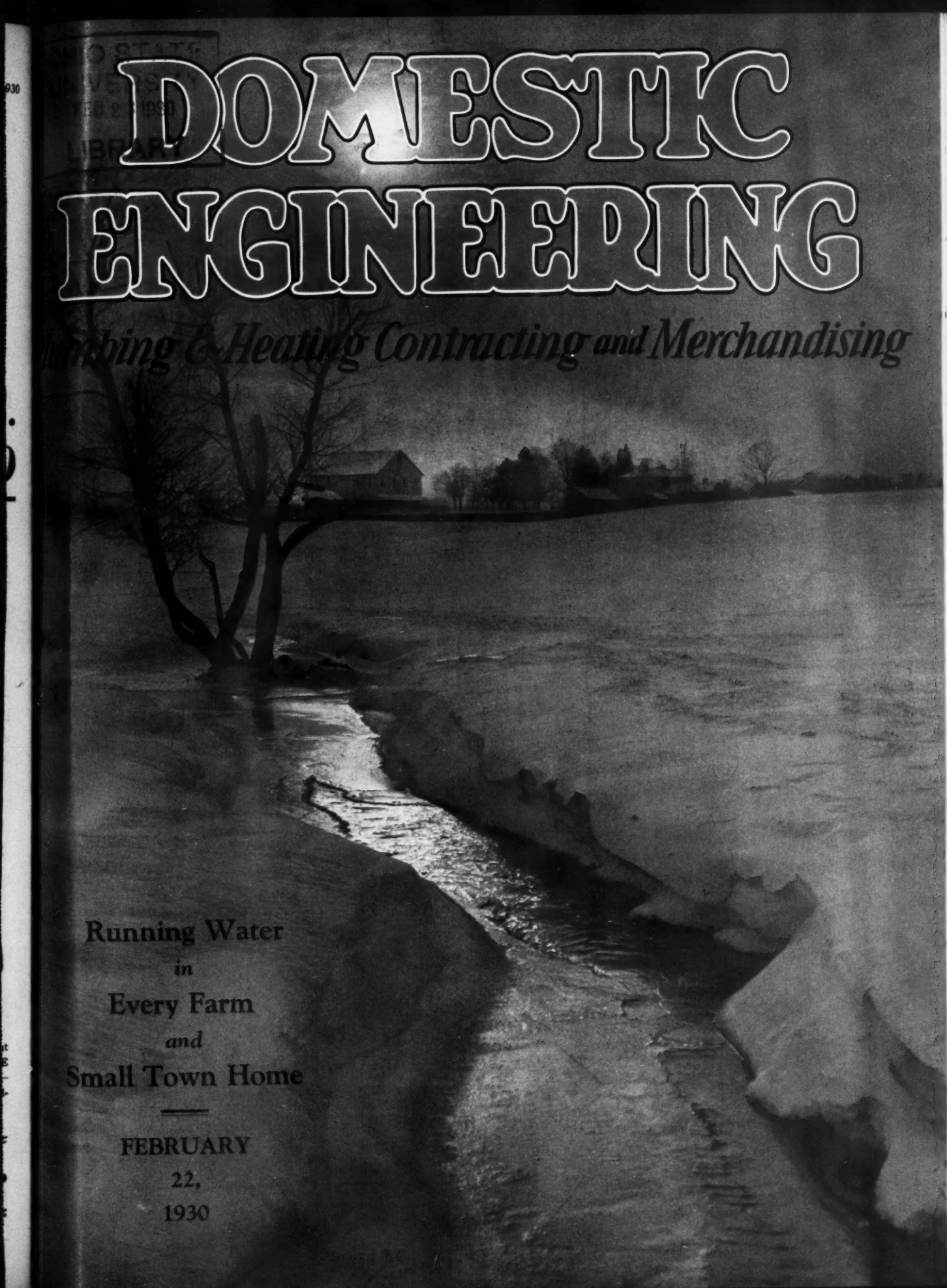
DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising



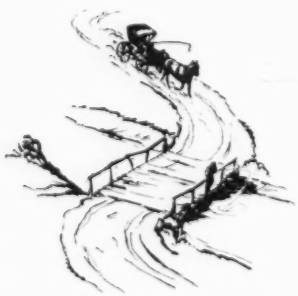
Running Water
in
Every Farm
and
Small Town Home

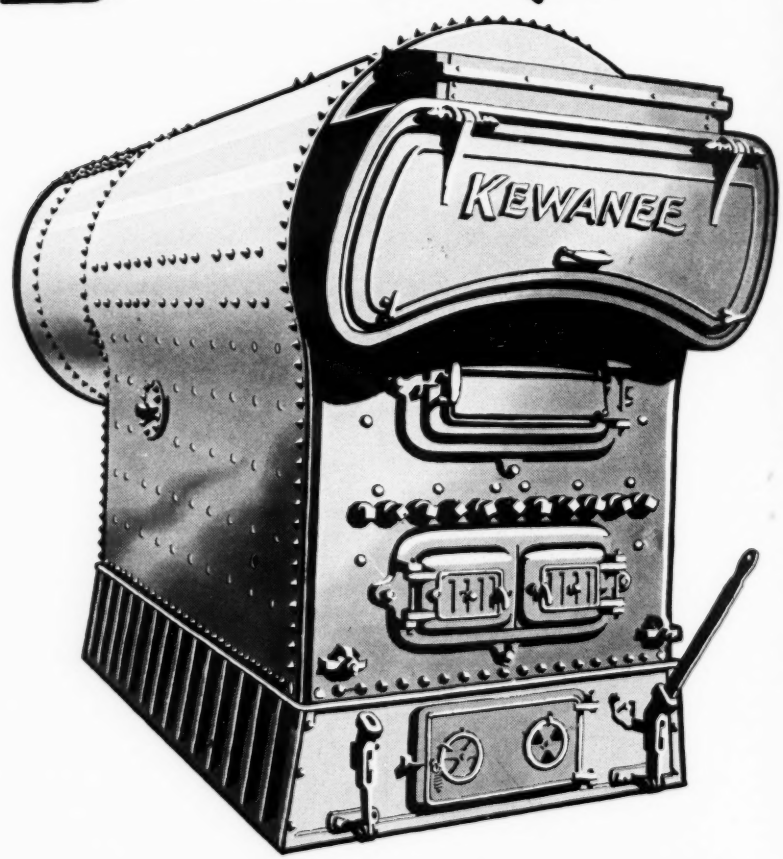
FEBRUARY
22,
1930

KEWANEE STEEL BOILERS

Old time wooden bridges cost less to build than modern steel structures. But they continually needed repairs and soon had to be replaced.

Experience has shown that the economical way is to build durably.





The durable, steel riveted construction of Kewanee Boilers *adds so many extra years* to their life that the cost per-year-of-service is far below that of makeshift "bargain boilers."

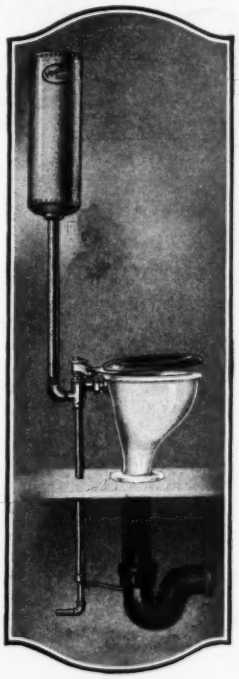
Furthermore: Correct and generous design guarantees *more heat with less fuel* while unusually sturdy construction practically eliminates repairs.

KEWANEE BOILER CORPORATION
Division of American Radiator and Standard Sanitary Corporation
KEWANEE, ILLINOIS
Branches in 40 principal cities

It Costs Less to OWN a KEWANEE

"Cold enough to freeze a VOGEL PATENTED . . . would be a good descriptive expression . . .

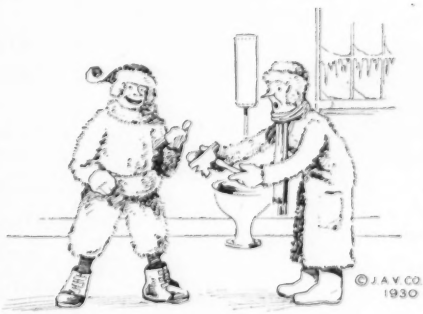
BUT IT CAN'T GET THAT COLD



Number One Vogel Frost-Proof Closet. Simple in operation. Sturdy in construction. Half a million in operation.

AFTER a **VOGEL** Frost-Proof Closet or Hydrant has been operated, no water remains above the valve, which is buried in the ground—well below any danger from frost.

Over half a million **VOGEL** Closets and Hydrants are now in use, and giving the kind of economical service your customers like—that is, wear-proof as well as frost-proof.



Today is the day
We thought would be best
For Coldie to come
And submit to a test.

That Coldie is truthful
We'd never deny
But on Washington's Birthday
We know he won't lie.

We asked him about
All the Vogels he'd found
Of which there are half
A million around.

And Coldie replied
"I sure am 'regusted'
"Not one single Vogel
"Has even been busted."

"I never have heard
"Of a single complaint
"If I heard of one freezing
"I think I would faint.

"The others don't last
"Like Vogels do
"For Vogel when old
"Is as good as when new."

We'll be glad to send you folders, blotters, or stickers to send to your customers telling them features of **VOGEL** Frost-Proof Closets and Hydrants. Tell us how many you need.

The **VOGEL** *line is a profitable line to push*

VOGEL FROST-PROOF HYDRANT
Install it in garages and yards of all sorts.

See inside back page for VOGEL SELFLUSH advertisement.

JOSEPH A. VOGEL COMPANY
Wilmington, Del. St. Louis, Mo.

VOGEL PATENTED Frost-Proof Products

DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

Established 1889

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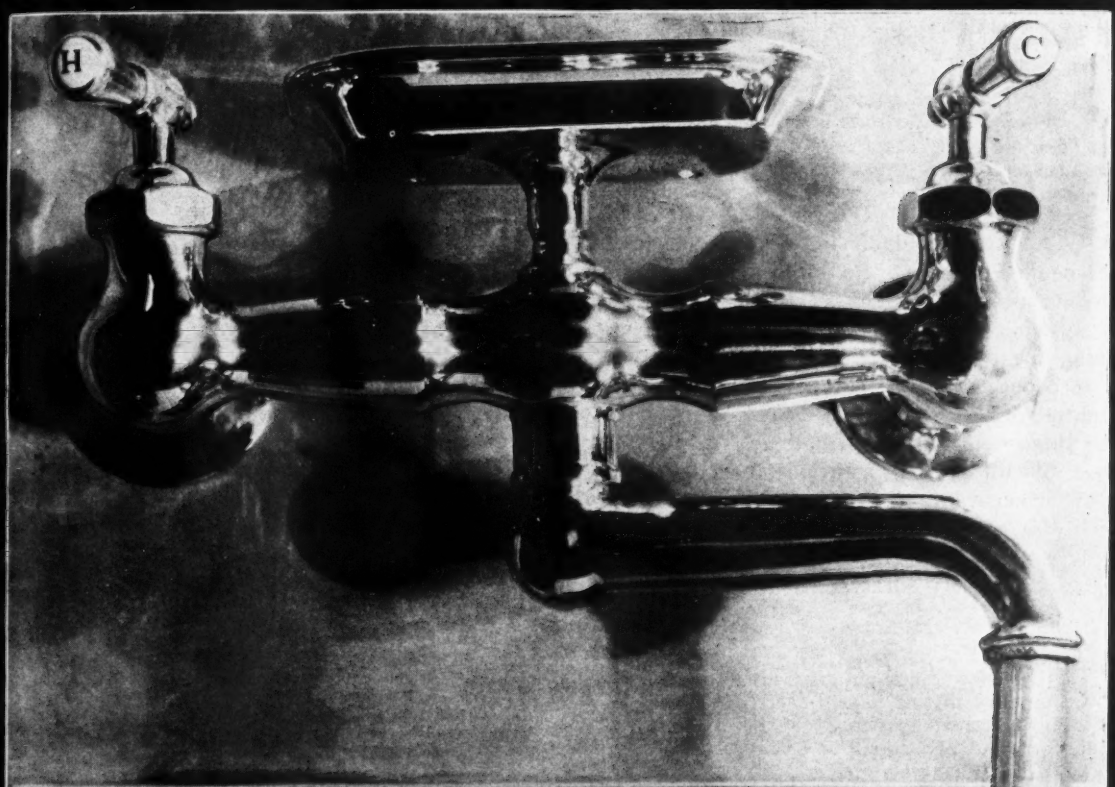
WOLVERINE



A NEW DEPENDABLE DOUBLE SINK FAUCET.

THIS sturdy, attractive Double Sink Faucet fills a pressing need for massive beauty.

The compactness of design is not only pleasing to the eye but extremely practical. Master Plumbers will be interested in the large waterways and the solidity of construction that is so typical of all products of the Wolverine Brass Works.

The model shown here is Wolverine Chromium Plated, with metal soap dish and metal handles (china indexed) but is available with porcelain soap dish and handles.

A real addition to a great line of Dependable Brass Goods.

WOLVERINE BRASS WORKS

GRAND RAPIDS MICHIGAN

"Domestic Engineering" is designed to fill alike the needs of contractor, wholesaler and manufacturer.

Between Ourselves

"Responsibility for stability and prosperity rests with the whole people."—President Hoover.

Not every plumbing contractor in the smaller city has considered the farmer as a source of additional business; and has thereby passed up an excellent opportunity; for, as pointed out in the leading article in this issue, "Running Water in Every Farm and Small Town Home," by W. W. Stevens, the plumbing code of the state prevails on the farm as well as in the city, and thus most installations require the attention of a trained master plumber.

Your Editor

MR. STEVENS also indicates a number of effective aids to selling the farmer on the convenience, comfort and sanitation of a running water supply system, and provides technical information explaining the several types of systems commonly used. In connection with selling the farmer on the idea, contractors who have had experience in doing work of this sort, have found that the task was not usually a difficult one. In many instances the home owner or farmer wants to do part of the job himself, in which case a contract is made on the unit basis, and it becomes a co-operative job. Such projects have worked out very successfully.

THE Master Salesman gives an interesting story in this issue's Merchandising Section of the experience of the master plumber who had gone out to do a repair job on a leaking range boiler and, noticing that preparations were being made for the coming of the laundress to do the washing, got the idea that he should sell this customer an electric washing machine. The story gives the step by step campaign of the contractor and is concluded with the Master Salesman's analysis of the situation. Another article of importance in this feature section is an account of a particular contractor's merchandising methods which have proven successful.

R. M. STARBUCK, JR., has an article in this issue in which he comments on the series of drawings that he has selected as being an intelligent use of isometric elevations in a particular remodeling problem. As Mr. Starbuck says in his article, the plumbing and heating trades are beginning to see the value of isometric elevations in their work, and are desirous of instruction in the principles of isometric drawing. So, in furtherance of this instruction, he has furnished a set of well executed drawings for our readers to study. If you are interested in this subject, Mr. Starbuck's article will benefit you.

"I AM sorry we do not have time to read carefully every issue of DOMESTIC ENGINEERING, as I know from long experience in my own business, and the experience I had years ago on the road, that every plumbing and heating shop should have and read your paper, for it contains much in good reading and advice of benefit to the trade, and besides, the advertisements alone are worth the price of the paper to those who want to keep posted on improvements and where to purchase goods.

"We have been subscribers to your publication for over forty years."—The above reflects the attitude of Charles Light, Eureka Heating & Ventilating Co., Saginaw, Mich.

"EXAMPLES of Arc-Welded Pipe Construction" is the name of a short but very interesting article by R. T. Gillette which appears in this issue. This article is doubly interesting because of its timeliness in view of the constant and extensive increase in the employment of arc-welding in all industries that make use of metals. This account of various applications of arc-welding may be of help to those confronted with similar problems.

THE articles on "Steam Fittings and Accessories" by H. L. Alt, several of which have appeared in previous issues of DOMESTIC ENGINEERING, continue to be instructive and even stimulating. Mr. Alt writes with an authoritative and startingly broad knowledge of this important subject. It is of the highest practical advantage to every contractor to keep up with this series of papers.

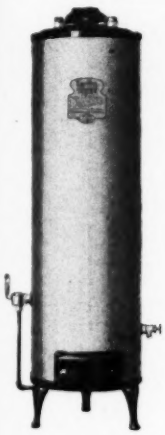
"TURNING Difficulties to Advantage," by George Mellen, gives a good illustration of the engineering problems that the plumbing contractor often meets in the installation of plumbing systems. In not all cases, however, is the contractor fortunate enough to be able to make the very obstacles in his way, perform to his advantage. This article, which tells of a unique plumbing project completed in a four story office building in Honolulu, Hawaii, will appear in a forthcoming issue of "Domestic Engineering."

The man who is so busy that he does not have time to read his trade paper is like the man who was so busy chopping wood that he did not have time to sharpen his axe

You are
Right from the Start

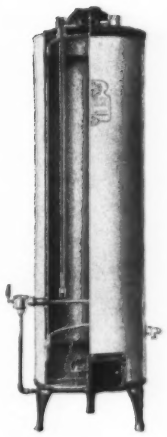
When You Recommend and Install the

EverHot
AUTOMATIC
WATER HEATER



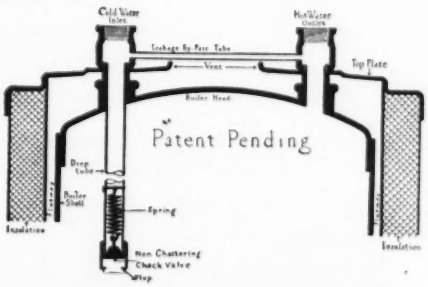
AVOID the embarrassment of having to say, "I thought it was a good one, and trouble free." Install the EverHot and *know* that you are giving your customers the best there is in Automatic Hot Water Service.

EverHot Automatic Water Heaters are built—not just assembled—in one plant, where inspections and tests are rigidly conducted to insure perfect operation right from the start. There is nothing to worry about—EverHot simplicity avoids the necessity for frequent repairs and adjustments, and the materials used are of the highest quality, which means that each heater will serve for years and years.



IT IS THE ONLY HEATER WITH THE LEAKAGE BY-PASS

The Faucet Leakage By-Pass is an exclusive feature of the Ever-Hot Heater, and it is standard equipment. It prevents the waste of gas otherwise due to dripping or leaking hot water faucets. Like the EverHot itself, it is simple in construction and trouble-free.



The Leakage By-Pass is but one of the many features of the EverHot Heater. If you will talk EverHot, show EverHot to your prospects, you will find sales easy to make and it is a foregone conclusion that with the proper model installed complete satisfaction will result.

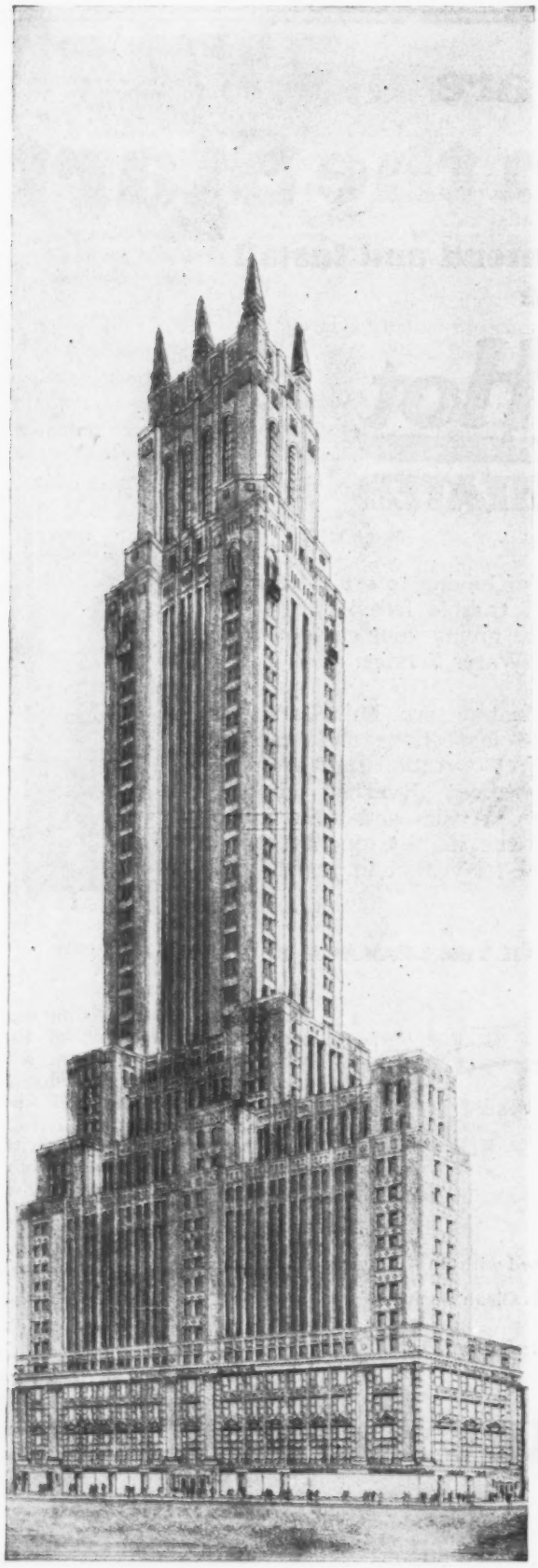
Of course, EverHot Heaters are equipped with an Automatic Pilot Control.

EverHot Business is Clean Business.

Write for full information.

EverHot Heater Company

5211 Wesson Ave. **Detroit, Michigan**



The Lefcourt Colonial Bldg., New York City, is piped throughout with Youngstown steel pipe.

Architects—
BARK & DJORUP
Heating Contractor—
E. G. WOOLFOLK CO.

Easy to Install—Lasting in Performance

YOUNGSTOWN steel pipe combines ease of installation with permanence—a combination which means better and more profitable pipe installations for plumbing and heating contractors.

Every length of Youngstown pipe runs uniform in size; threads are clean and deep-cut; it works with ease and speed—features which tend to eliminate lost motion on the job.

If you are not already using Youngstown pipe in your plumbing, heating or sprinkler system installations, try it on your next job and see for yourself how easy it is to install.

THE YOUNGSTOWN SHEET AND TUBE COMPANY

One of the oldest manufacturers of copper-steel, under the well-known and established trade name "Copperoid"

General Offices—Youngstown, Ohio

YOUNGSTOWN

Galvanized Sheets Protect ∴ Save With Steel

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LONDON REPRESENTATIVE—The Youngstown Steel Products Co., Dashwood House, Old Broad St. London, E. C. England

Now That Economy Counts For So Much

Burnham Boiler's long fire travel counts more than ever. Its long fire travel makes its short coal bill.

P.S.–

This same long fire travel is an additional insurance of economy, when oil is the fuel. It also has a way of muffling down combustion noises.

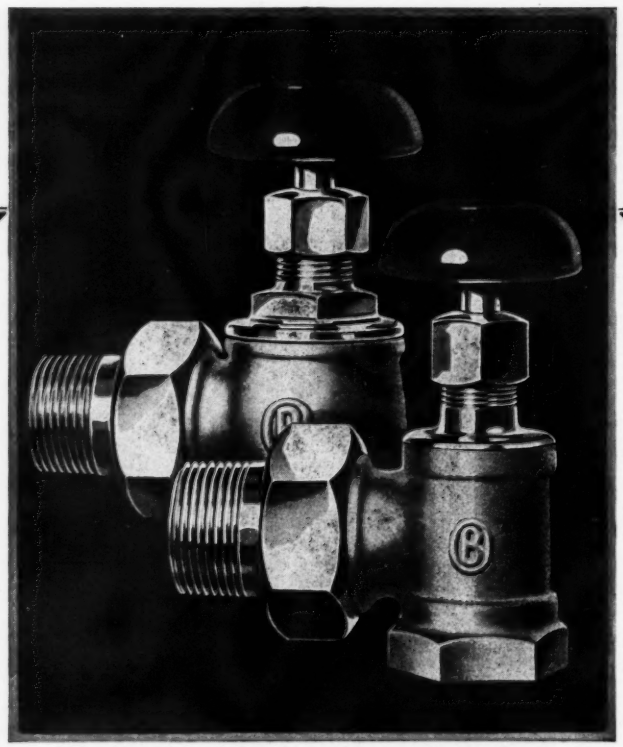
P.S.–P.S.–

There's a booklet called Letters To and Fro ' tells of eight people' uccessful solution of e: separate home heating problems. Send for it.

Burnham Boiler Corporation

IRVINGTON, NEW YORK

Representatives in all principal cities of the United States and Canada



No. 30 line O-B Steam Radiator Valve (at left, in illustration) and the No. 40 line Hot Water Radiator Valve (at right, in illustration) are regularly furnished heavily nickel plated with highly polished trimmings. Hand-wheels are of black molded composition.

USE IT EITHER WAY

IF COMPETITION on a certain job is keen and you feel that you have to "shave off the price a bit"—don't forget that it costs you sixteen cents less per valve to make-up Ohio Brass valves than it does ordinary valves. Or, if you already have the contract, you can make more profit by reducing your labor-cost through the use of O-B valves than you can by buying valves of mediocre quality.

Many successful contractors find it advantageous to make their decisions regarding materials to be used on a job at the time they make up their estimates. By indicating Ohio Brass valves in their bids they not only assure themselves of the lowest possible installed cost, but they also increase the builder's respect for their judgment and ability.

Ohio Brass radiator valves are made ever with the contractor's make-up problems in mind. Even the union seats of the tail pieces receive an extra machining after nickeling to assure easiest and quickest steam-tight fit. You will like them because they give "an extra profit in the make-up".

Ohio Brass Company
Mansfield, Ohio
1197V

Ohio Brass Co.

NEW YORK PITTSBURGH
PHILADELPHIA CHICAGO
ATLANTA BOSTON CLEVELAND ST. LOUIS
WM. P. HORN CO: LOS ANGELES SAN FRANCISCO SEATTLE

PORCELAIN INSULATORS
LINE MATERIALS
RAIL BONDS
CAR EQUIPMENT
MINING MATERIALS
VALVES

MONCO

STEEL HEATING BOILERS

for

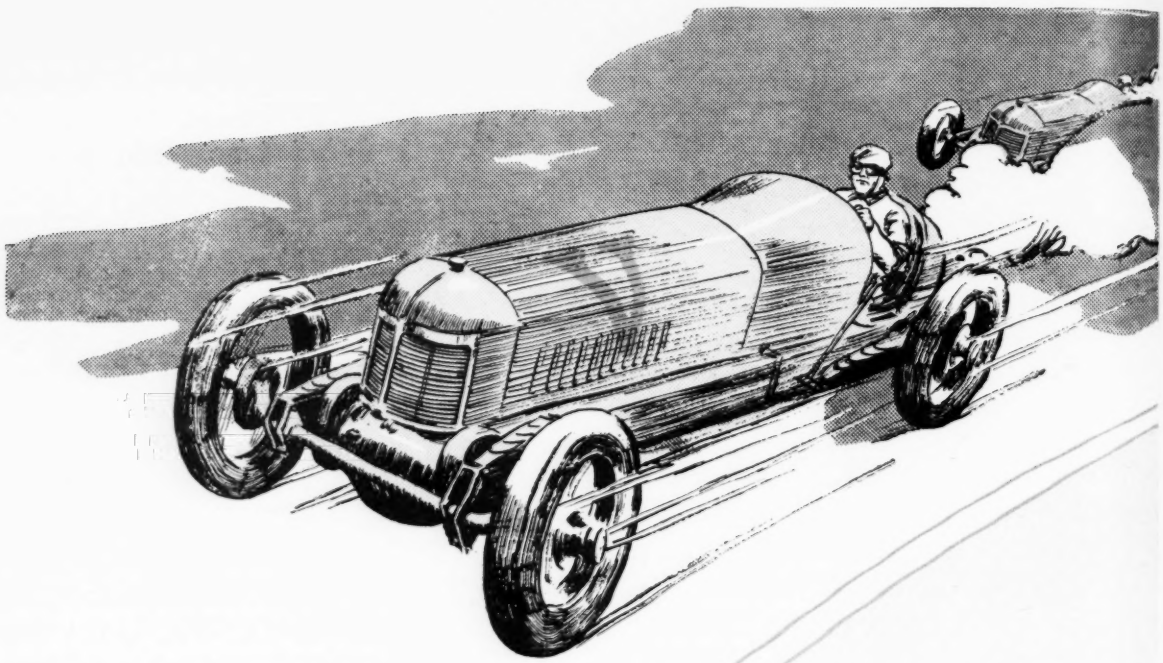
COAL OR OIL BURNING

FIRE TUBE BOILERS
COIL WATER HEATERS
COIL HEATING BOILERS

WRITE FOR COMPLETE
INFORMATION

MONITOR
BOILER COMPANY

1505 RACE STREET PHILADELPHIA, PA.



Out in front and going strong

A leader in sales and service from the start—that's Williams' Improved "Vulcan" Chain Pipe Tongs. Why? Because they are built to beat all others. Wholly made from wrought steel, double ended and reversible jaws that mean long life; straight cut teeth for thorough gripping pressure and proof-tested, CERTIFIED chain — small wonder that the "Vulcan" has earned a reputation for speed, and dependability unrivalled in the trade.

Know more about these famous tongs. Write TODAY for illustrated literature. They're guaranteed of course.

J. H. WILLIAMS & CO.
"The Wrench People"
New York BUFFALO Chicago

GENUINE
WILLIAMS
SUPERIOR DROP-FORGED TOOLS
"VULCAN"
IMPROVED

THE CELEBRATED SKIP TOOTH DIE
(Genuine Nye)
REG. U. S. PAT. OFFICE

A Letter from Harry G. Nye

February 22, 1930.

To the Plumbers and Steamfitters of the U. S. A.

"It Won't Be Long Now" Little Willie Said, As He Sawed Off Grandpa's Crutch

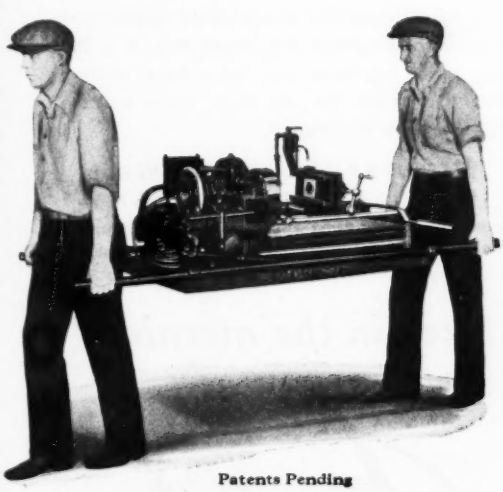
Fellow Citizens:

Well, it won't be long now before we will be taking the H., S. & J. when we want to go to California. (And who doesn't?) It takes four days now to get from Greenwich Village to Hollywood. (And a good deal longer if you are trying to break into the movies). But by taking the H., S. & J. you will be able to make it in two. Days, I mean.

The way it is now, four days is a long and tedious trip. Just think of it, four days to get from New York to San Francisco! And while you are just thinking, just think what our grand-dads would have thought of it. It took them four months on horseback, and a few months more in a covered wagon.

They probably cried all the way about the service, although they didn't weep and wail anything like we do now. Well, soon we will be able to make it in two days. Then I wonder what we'll want? We'll want to do it overnight, and then before bedtime, and then instantaneous. Do you know what the U. S. means? It means the Un-Satisfied.

But the Hop, Skip & Jump by rail and air will be a great step forward, or hop rather. You will take a train ride and then a hop and skip, and then a train ride and a jump, and you will be there. The sleeper rides will be so you can get a little sleep, if you can, and the stops so you can get a little food, if you think you care for any.



Patents Pending

"THE LIGHTWEIGHT CHAMPION"
Threads—Cuts Off and Reams
CAPACITY ½ to 2 INCHES

The world now demands speed, which accounts for things like the H., S. & J., extra carburetors, petting parties, machine guns, pre-digested foods, forward passes, partial payments, bathrooms, market tips, fertilizer, divorce courts, auto-hearses, synthetic gin, minute steaks, and Nye pipe-cutting tools.

Just as the H., S. & J. will cut the time in two between Long Island and Los Angeles, so Nye Tools cut the time in two that it takes to cut a pipe in two. The plumber or steamfitter who wants speed wants Nye Tools.

Yours for speed, Harry G. Nye

OTHERWISE KNOWN AS
THE NYE TOOL & MACHINE WORKS
4120-30 Fullerton Avenue Chicago, Ill.

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THE CELEBRATED SKIP TOOTH DIE
(Genuine Nye)
REG. U. S. PAT. OFFICE

SENSATIONAL NEWS FOR YOUR CUSTOMERS . . . . SENSATIONAL NEW PROFITS FOR YOU

The new

CLOCK EQUIPPED

Jewell Junior Temperature Regulator

Complete with all Fittings to Install

$35.95

PLUS INSTALLATION AND BATTERIES

Today is a red letter day in the history of automatic heating.

Today you are able to open up an entirely new market for temperature regulators and earn entirely new profits impossible to get until now.

Today Minneapolis-Honeywell announces a sensational addition to the famous Jewell line, a *clock equipped*, quality temperature regulator, complete with motor and ready to install, at the low price of only $35.95.

Low voltage operation. Trouble-free. Reliable. Easy to install. Backed by all the resources of Minneapolis-Honeywell, the pioneers in automatic temperature control. And backed by national advertising in the home magazines.

Priced ready to install. Installation price is established by you.

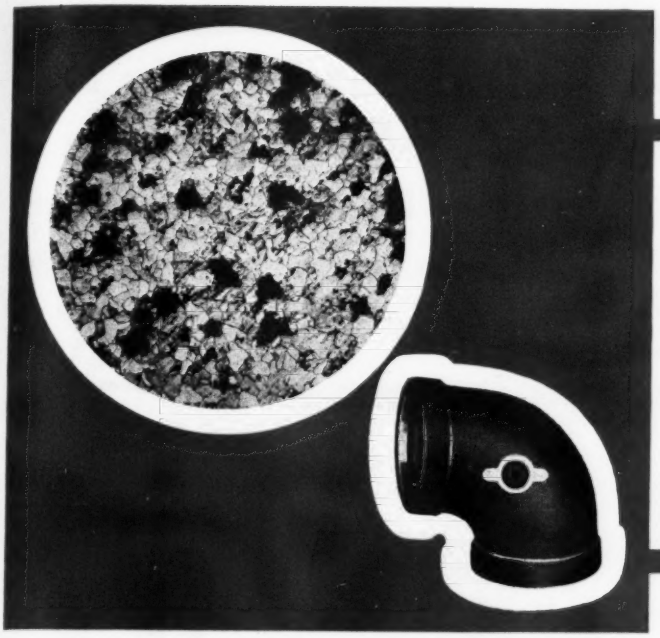
The Jewell Junior *clock equipped* temperature regulator completes the Jewell line. It is the big profit regulator you have been waiting for. It is ready for you now. Write or *wire* for complete information.

MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

Executive Offices: 2801 Fourth Ave. So., Minneapolis
Factories: Minneapolis, Minn., and Wabash, Ind.

"An extra hour's sleep in the morning!"

Jewell Junior TEMPERATURE REGULATOR



SCIENCE OFFERS YOU A BETTER FITTING

Malleable iron is a subject on which science has focused a great deal of attention. The result is a better understanding of its composition and improved methods of manufacture.

These achievements are now being utilized to give the fitting user a better product to work with . . . one that is not only easier to handle, but one that is more durable than its predecessors.

The above microphotograph is one illustration of this progress. It shows the metallic structure of a fitting taken at random from the automatically controlled ovens in our plant. Note the well defined areas of clear Ferrite and the completeness of precipitation of the Temper Carbon.

With such a structure, the high ductility and toughness of "DETROIT" FITTINGS is obvious. *It also makes it easy to understand why such a fitting can be twisted, bent, or hammered almost flat without cracking a single thread.*

Scientific control offers you and your customer better fittings.

Manufacturers of a full line of Brass Valves, Cocks, etc., for steam, water, gas and oil. *Distributed only through wholesalers.*

DETROIT BRASS AND MALLEABLE WORKS

Detroit » » » Michigan

DETROIT FITTINGS

This company believes in utmost protection to the dealer—the logical link between factory and consumer.

A WINNER every time! The Richardson Round Boiler is safe to install on any job. Its heating efficiency *will never be out of date.* As a matter of fact, it is this type of round unit that actually provides the heat in the shiny blue Richardson Square Cased Boiler.

Pull this trump card on those prospects who need a new boiler badly, but can't make up their minds on what type to get. They can't go wrong in buying it—and with its long record of heating performances you can't go wrong in recommending it.

RICHARDSON & BOYNTON CO

Manufacturers of "Richardson" "Perfect" Heating and Cooking Apparatus Since 1837

260 Fifth Ave., New York, N. Y. -:- Utica, New York

NEW YORK UTICA NEWARK PHILADELPHIA BOSTON CHICAGO BUFFALO MINNEAPOLIS CINCINNATI DETROIT PROVIDENCE

Cuts water bills — eliminates water hammer, splashing and noisy toilets — prevents leaks in piping and fixtures

WATTS

Water Pressure Regulator
with Strainer

SPLASH! Too high water pressure. Wasted water, strained plumbing and noisy toilets. Bang—Bang—BANG! Water hammer loosening connections and wearing out fixtures. The Watts Pressure Regulator permanently corrects these troubles.

Some of the features that make the Watts Regulator give perfect service indefinitely are:

Large orifices will pass all the water required and maintain a uniform and economical reduced pressure.

All bronze construction—no danger of corrosion or electrolysis in the valve. Disc closes against a well-rounded seat, insuring tight shut-off even against a dead end and will not allow the pressure to build up when no water is being used.

New live rubber diaphragm with canvas insert lasts indefinitely. Large diaphragms make the valve very sensitive to the least pressure changes. The composition strainer has large sediment chamber and clean-out plug with extra heavy perforated brass screen. Reducing valves can be furnished with or without a strainer.

Mail the coupon or write for catalog 23-S.

WATTS REGULATOR CO.
Makers of water and steam Regulating Devices since 1874
249 Lowell Street :: Lawrence, Mass.

John G. Kelly, Inc.,
U. S. Sales Associates, 210 E. 45th St., New York, N. Y.
Johnnie Moore, 1020 Lawrence Ave., Chicago, Ill.,
Chicago Representative
W. H. Cunningham & Hill, Ltd., 269 W. Richmond St.,
Toronto, 2, Canada

Watts Regulator Co.,
249 Lowell St., Lawrence, Mass.

Without obligation, kindly send copy of your Catalog 23-S.

Name.....

Address.....

Town..... State.....

Truly Malleable

Kennedy Malleable Iron Pipe Fittings are so truly malleable that they may be crushed almost flat without splitting.

YOU can pull up to a tight joint on Kennedy Malleable Iron Pipe Fittings without danger of splitting or cracking at the threads or in the body. They are made truly malleable by heating in annealing ovens for an ample length of time to assure complete annealing through and through each fitting.

Thorough malleability is but one of your many assurances of uniformly good fittings when you use Kennedys. They are carefully inspected and tested before shipment to make sure that each lot is perfect in every respect—without flaws inside or outside, with clean, sharp, accurate threading and generous chamfer, and with uniform and heavy galvanizing.

Order Kennedy Malleable Iron Fittings from your dealer—either a few to inspect and test, or enough for your next job, and you will soon see why specifying "Kennedy" assures speedy and profitable piping jobs.

Send for the Kennedy Catalog

THE KENNEDY VALVE MFG. CO. ELMIRA, N.Y.

WAREHOUSES:
New York, 128-132 White Street; Chicago, 1335-1337 S. Clinton Street; San Francisco, 448-450 Tenth Street

SALES OFFICES:
New York, Philadelphia, Cleveland, Chicago, Atlanta, Salt Lake City, El Paso, Los Angeles, San Francisco, Seattle

Facts

about Kennedy No. 3

Throughout the 52 years of Kennedy service to users of valves and pipe fittings, no Kennedy design has ever had to be recalled.

Standardize on KENNEDY for ALL your Valves and Fittings

Standard Bronze Gate Valve
One of the large Kennedy line of bronze and iron gate, globe angle and check valve types for a wide range of pressures.

Radiator Valve
Built in both hot water and steam types and designed to follow the standard roughing-in dimensions formally endorsed by the Heating and Piping Contractors' Assn.

The Comment Corner

"With Kennedy's, no more leaks from fittings due to splitting under wrench pressure."

"We find your fittings perfect and easy to enter or connect, with good tapping. Machine work is all that can be desired."

—two typical comments from enthusiastic users of Kennedy Malleable Iron Pipe Fittings.

KENNEDY

VALVES-PIPE FITTINGS-FIRE HYDRANTS

THIS RED BAND IS THE SIGN OF BETTER TANK HEATER PERFORMANCE

LOOK FOR THE RED BAND OF QUALITY

THE most thoroughly satisfactory method known of heating hot water is the coal tank heater. And in all tank heater history, there has been nothing to approach, in completeness of line and all-around satisfaction, the GLOCO Red Band Tank Heaters.

Forty-five sizes, ranging in capacity from 40 to 5200 gallons—*a complete range for every emergency.* Every GLOCO is tested to 300 pounds hydrostatic pressure and is positively guaranteed to withstand a maximum working pressure of 125 pounds.

GLOCO Tank Heaters include all known improvements and exclusive advantages which make for economy, service and long life. Distributed solely through wholesalers, and made with a keen appreciation of the problems of the man who sells and installs them.

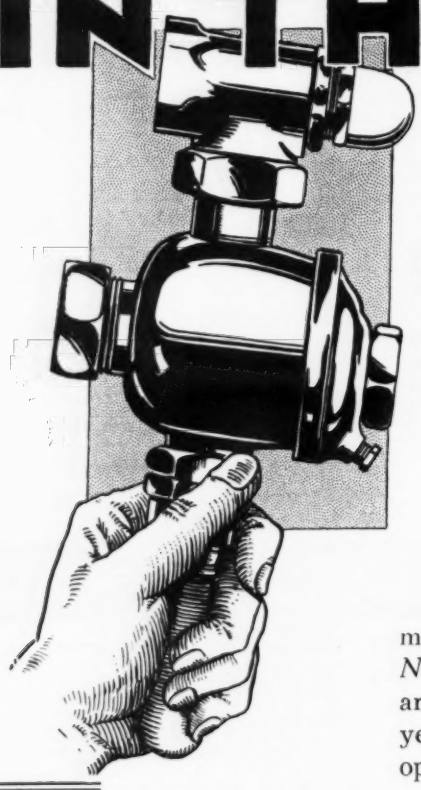
EVINS F. GLORE & SON, INC.
Grand Central Terminal Bldg., New York City

TRADE MARK

GLOCO

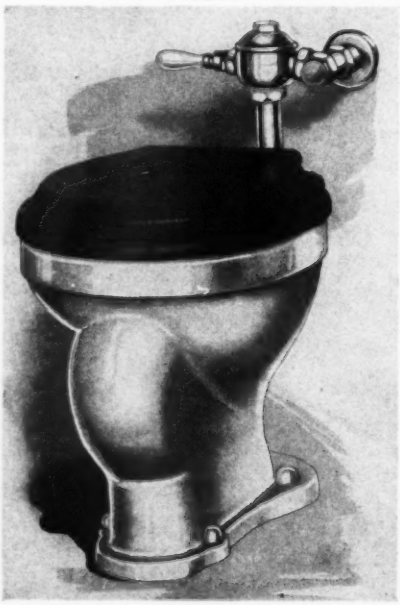
RED BAND TANK HEATERS

IN THE HAAS



Nothing Ever Wears Out *but the* Washers!

In Haas Universal Flush Valves there are no metal-to-metal parts to wear loose and rattle. *Nothing* can wear out but the washers—and there are many cases where they last for over fifteen years. An unqualified guarantee of satisfactory operation for five years covers each one.



Trouble free and everlasting, simple and easily adjusted, Haas Valves appeal to contractors, plumbers, architects and owners alike. They are self-cleansing—water passages do not clog, even with strong salt or alkaline water. Nothing to get "out of order." Easily taken apart. Adjustment for flush and amount of after-fill is very simple—just adding or removing one or more washers.

Built for long, hard service. Designed for quick installation. Priced attractively. Ask your jobber about Haas Flush Valves, and about Haas toilet units equipped with them.

THE PHILIP HAAS CO., Inc., Dayton, Ohio

Haas

Trouble Free and Everlasting

HUNDREDS of plumbers now know the truth of those words. In just the last twelve months their profit therefrom is something they wouldn't care to pass up.

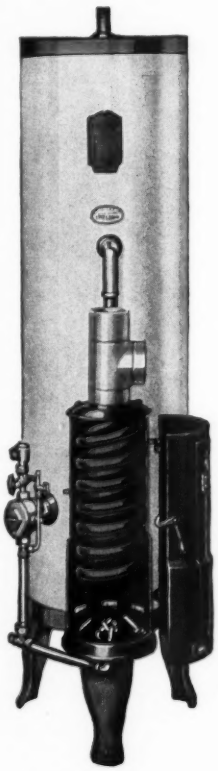
HUNDREDS of heater buyers, too, know the truth of those words. They also have found the profit angle to be positive, generous, constant. Now they're influencing their friends to take advantage of it.

ACCEPTANCE of this kind—tangible, definite proof—should now be utilized in making more money for your business, more permanent friends for your store. Don't delay your opportunity.

Not One... Nor Two... BUT

THREE GUARANTEES

that no enterprising plumber can afford to pass up!



No. 20SA

List Price $66 Complete

BUT remember—the only heater that gives these three guarantees is the Side Arm Type. The guarantees are part of the design—actually engineered into the job. They mean more sales for you, because every one of your customers is interested in having

THE GUARANTEE OF LONG-LIFE TANK SERVICE

(in Side Arm Type, the tank is never exposed to corrosive gas or flame)

THE GUARANTEE OF YEAR AFTER YEAR SERVICE

(in Side Arm Type, water is heated by passing through coils in contact with intense flame.)

THE GUARANTEE OF CLEANER WATER

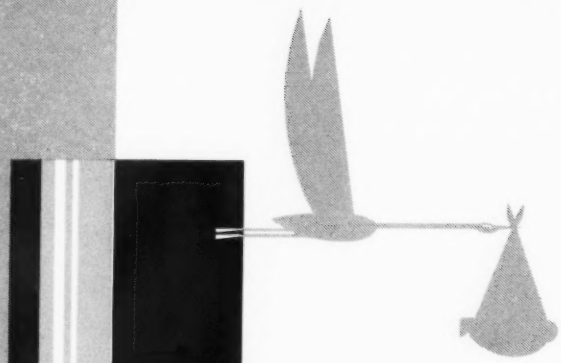
(in Side Arm Type, water to be heated is taken from tank *above* the Sediment Line.)

All of these Three Guarantees are part of every good Side Arm Type heater. In the Hotstream, however, you are able to give your customers many extra features that no other Side Arm Heater offers. Don't let some other plumber sell more satisfaction than you can. Write today for full particulars.

THE HOTSTREAM HEATER COMPANY

"Makers of Heaters that Heat" CLEVELAND, OHIO

HOTSTREAM
AUTOMATIC STORAGE
HEATERS



Here is an amazing new fitting worthy of the plumbers skill

Pat. Pending

Streamline Coupling Copper to Male I. P. S.

Streamline 90° Elbow Copper to Male I. P. S.

Pat. Pending

Streamline 90° Elbow Copper to Copper

Pat. Pending

Pat. Pending

Streamline Coupling Copper to Copper

Pat. Pending

Streamline Tee Copper to Copper to Copper

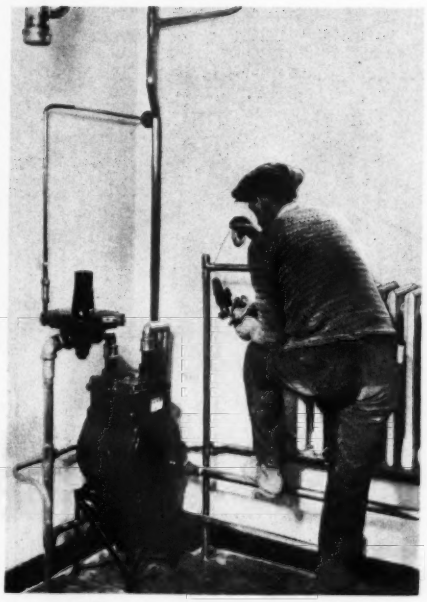
If Your Costs Were No Higher!

Would you use everlasting copper on your plumbing installations in place of materials that rust and corrode?

You can do it on many jobs by using the wonderful new Mueller Streamline Fitting and Mueller Copper Water Tube.

The new Mueller Streamline Fitting is a threadless fitting designed for conveniently soldering a connection to copper tube. It is so arranged with groove and holes (see illustration) that solder access and spread is mechanically taken care of by means of the well known physical law of capillary attraction. The tapered ends of the fitting which naturally produce a thin or feather edge, hasten cooling and act as a solder gate.

Mueller ★Streamline Fittings



Plumber making connection with Mueller Streamline Fitting to Mueller Copper Water Tube. A Mueller Streamline Fitting requires less space than any other fitting.

Cost less.

Require a mechanic, the plumber, to install them or take them apart if alterations are necessary—a jack-of-all-trades cannot do it.

Require less space than any other fitting—a great advantage where working room is restricted.

Have a handsome streamline appearance, are absolutely smooth inside and are enormously strong.

Mueller Copper Water Tube

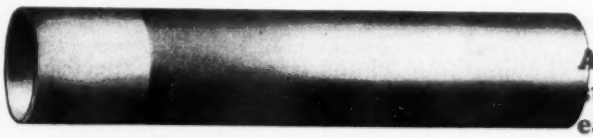
Cannot rust or corrode.

Cannot stain the water.

The flow capacity remains the same forever.

A Mueller Copper Water Tube filled with water under pressure and frozen repeatedly was not damaged beyond a slight bulging.

Mueller Copper Water Tube is everlasting.

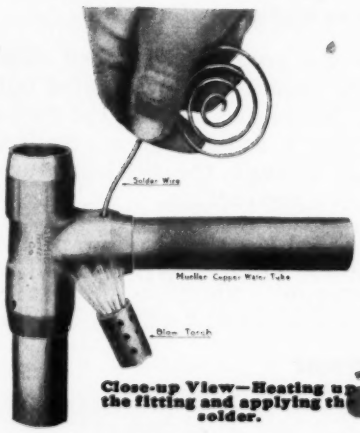


Copper Water Tube is rubbed with fine sand paper for about 1½ inch at end preparatory to applying the flux and making the connection.

A Mueller copper water tube and streamline fitting installation is easier to sell, makes a booster of your customer and adds to your reputation as a skilled mechanic.

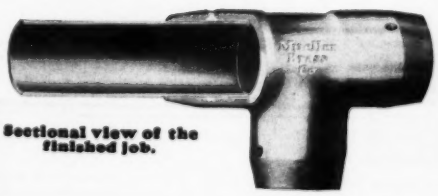
The Mueller Brass Co. of Port Huron, Michigan, originated the idea of using copper tube and flared type fittings for water services and were the first to introduce it in America.

CONSULT YOUR NEAREST JOBBER OR WRITE US DIRECT FOR COMPLETE INFORMATION.



Close-up View—Heating up the fitting and applying the solder.

and remember it's



Sectional view of the finished job.

Mueller Brass Co.

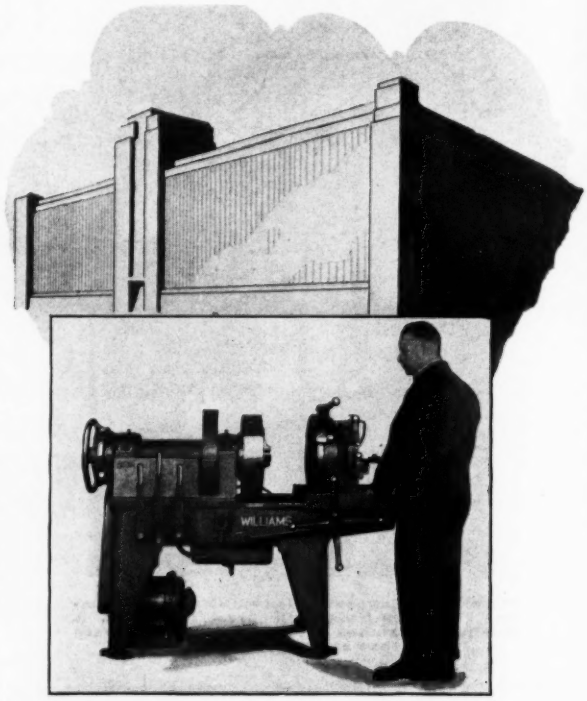
Port Huron, Mich.

Three Generations of Brass Making

★ **Streamline—Hydrodynamics—A line of uninterrupted flow free from eddies—graceful flowing appearance, etc. —[Funk & Wagnalls Standard Dictionary].**

On the world's largest building--

WILLIAMS "Wilco" Pipe Threaders set a fast pace



CONTRACTORS on the Chicago Mart were able to complete the piping on each floor on schedule time—because of the unequalled speed of their WILLIAMS "Wilco" Threading Machines.

As quickly as the piping was finished on one floor, the WILLIAMS "Wilcos" were hoisted up to the next—saving time on every threading cut, and saving more time on every set-up.

Change from one pipe size to another in a *few seconds*—

—by means of die opening lever, and simple graduation on head.

Only one set of dies, and one die-head to thread all sizes within the capacity of the machine—the 4-inch has regular capacity of 1 inch to 4 inch, with extra capacity ½ inch and ¾ inch. The 6 inch machine has regular capacity 1½ inch to 6 inch, with extra capacity 1 inch and 1¼ inch.

The greater speed of the "Wilco" is a big advantage on every threading job—large, small, or in between. The operator can easily get the machine's maximum speed for each size pipe being threaded, having four changes of spindle speeds with reverse gears.

Users of the WILLIAMS "Wilco" report that this remarkable modern threader is without an equal for speed, and for economy in operation.

New low die cost. High-speed steel dies are used—small and low in cost but substantial. These dies contact the metal so that friction is reduced to a new low minimum. As a result, the dies last much longer between regrindings.

Find out about the time-saving, profit-making features of the "Wilco." Write for Bulletin "D."

WILLIAMS TOOL CORPORATION
1203 Liberty Street
ERIE, PA.

Canadian Plant: Brantford, Ontario

WILLIAMS
WILCO

Adv. 130

PIPE NIPPLE, AND BOLT THREADING MACHINES

Send for your copy of this booklet

Larger, Better, More Handsome ~And Now~ Factory Installed

With 1930 comes the MAYFLOWER Model Trupar Electric Refrigerator—considerably larger, more handsome, far more roomy—better in a dozen ways than refrigerators with which it competes.

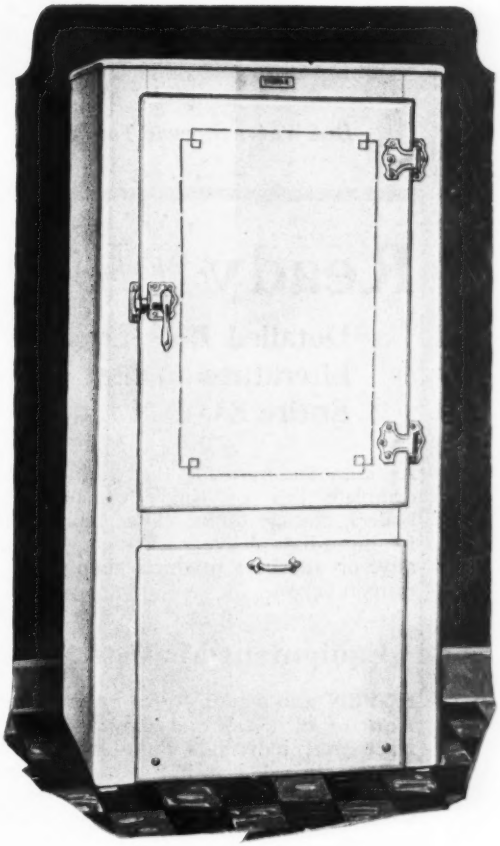
The MAYFLOWER is also very favorably priced—sells for substantially less.

Trupar dealers may rest assured of their full share of the season's business, now that a point by point superiority has been built into their product—making it impossible for the prospect who makes comparisons to doubt the greater value offered in the MAYFLOWER.

TRUPAR

"Performance as Promised"

TRUPAR MANUFACTURING CO.
140 DAVIS AVE. DAYTON, OHIO



Electric Refrigeration Stripped of the Installation Problem

This Refrigerator is factory installed and factory tested. Just set it on the floor and plug in. No longer should any dealer look upon Trupar as something strange—something to learn. No longer is there any installation problem to cause him to hesitate about selling Trupar.

Communicate with your jobber.

MAIL THIS COUPON!

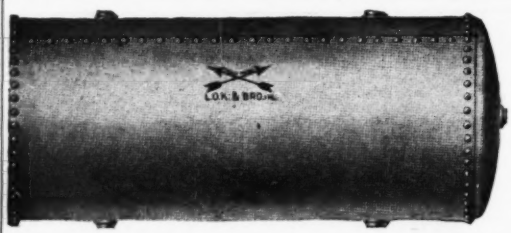
TRUPAR MANUFACTURING CO.
Dayton, Ohio

Send us full particulars regarding your MAYFLOWER Model.

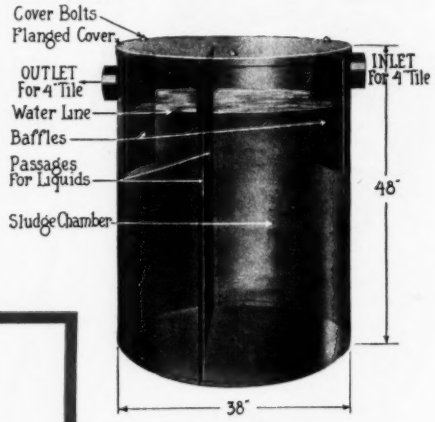
Name.....

St. and No.....

City & State.....



Hot Water Storage Tanks



Horizontal or Vertical Septic Tanks

Ready *Now!*

Detailed Illustrated Literature on the Entire KOVEN Line

As manufacturers for the trade, KOVEN stocks a complete line of sinks, expansion tanks, barber boilers, storage tanks, closet tanks, coil boilers, etc., for immediate delivery. For complete information on any, or all these products simply clip and mail the coupon below.

Equipment Made to Specification

KOVEN also manufactures to *your exact specification* (of all metals and alloys), special equipment to meet your individual requirements, including sinks (of galvanized iron, Monel, Allegheny, and other alloys) for large installations. Literature showing the scope of this specialized service may also be had upon request.

L. O. Koven & Brother, Inc.
154 Ogden Avenue
Jersey City, N. J.

Range Boilers

Kindly Check Items Interested In

L. O. Koven & Brother, Inc.,
154 Ogden Ave., Jersey City, N. J.

Gentlemen: Send us information on the following:

- ☐ Storage Tanks
- ☐ Septic Tanks
- ☐ Range Boilers
- ☐ Galvanized Scullery Sinks
- ☐ Expansion Tanks
- ☐ Closet Tanks
- ☐ Barber Boilers
- ☐ Coil Boilers

☐ Equipment to Specification

Name.....

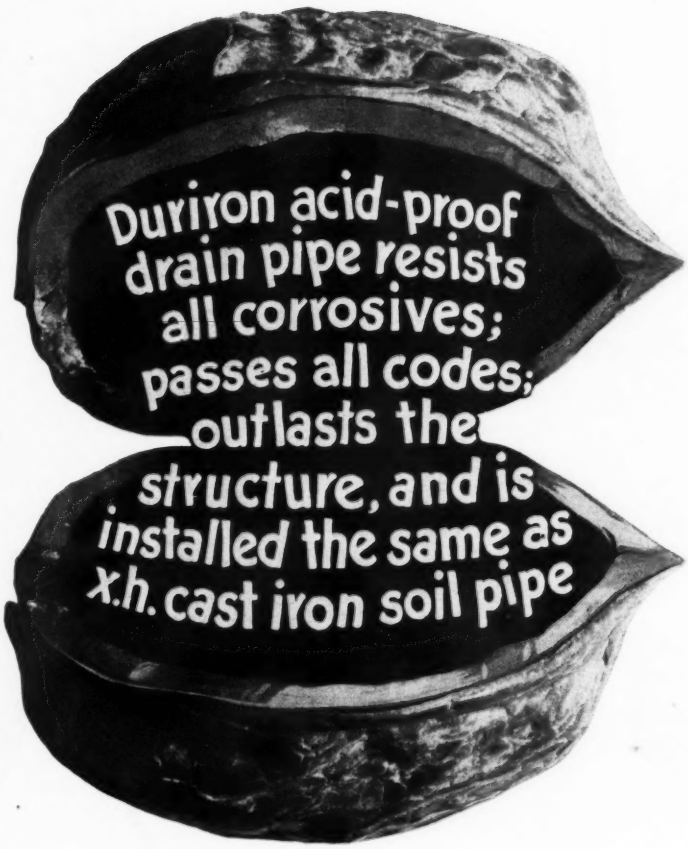
Address.....

.....

This Coupon Brings completely illustrated data on all items checked.

Mail It Today!

DURIRON • • •
in a nut shell



And there is a better profit for the Plumber in a Duriron installation.

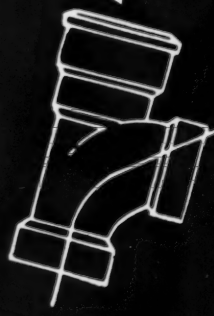
Write us for particulars.

The DURIRON COMPANY
DAYTON · OHIO

SANI-TEED PLUMBING PRODUCTS

"NIAGARA"

WASTE AND VENT FITTINGS



Branch wastes discharge into the main waste and vent at a steep downward grade as in the "Y" and 1/8 bend type fittings.

PATENT PENDING

Fast, accurate drainage under even the most adverse of conditions is easily accomplished with "Niagara" Waste and Vent Fittings.

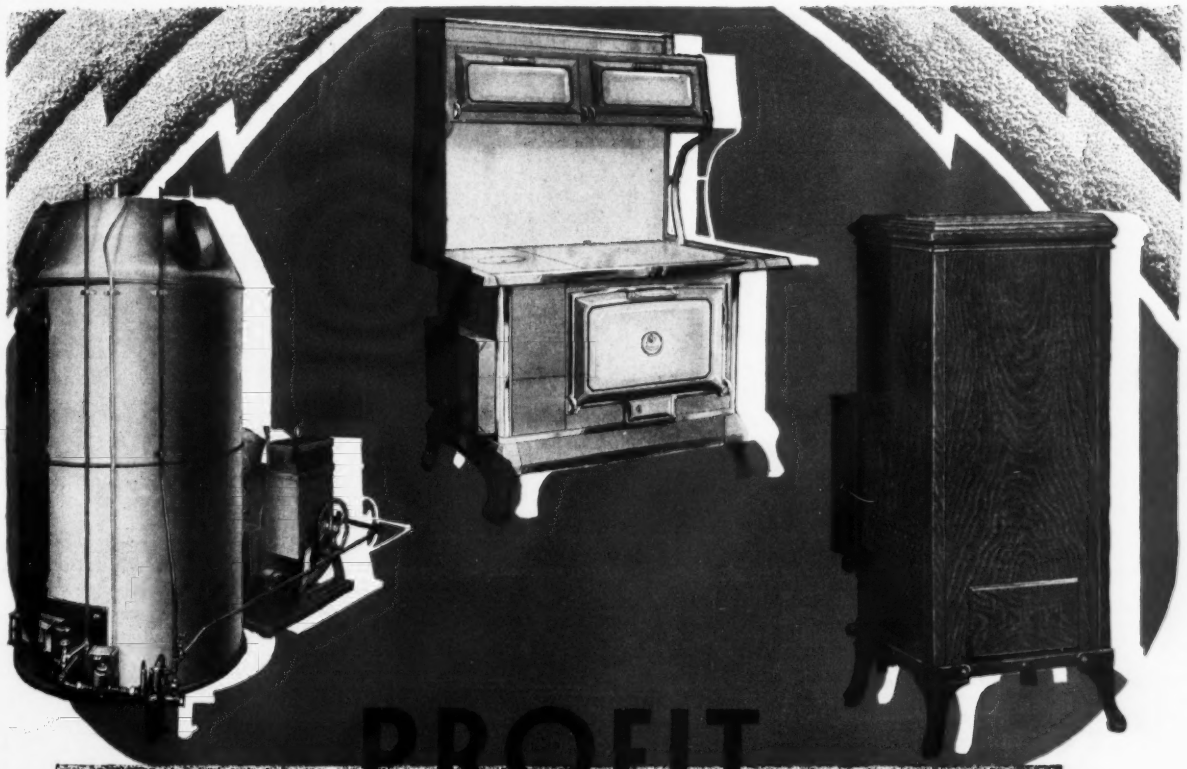
They will save time, money and trouble on installation and once on the line they will give years of trouble-free service.

Write us about the four other "Niagara" advantages. We will gladly send you, upon request, our complete catalog, together with several helpful specimen layouts.

SANI-TEED PLUMBING PRODUCTS

J. A. ZURN MFG. COMPANY
ERIE, PENNA.

Sales Offices in the following Cities:
Boston New York Philadelphia Pittsburgh Toledo Chattanooga
Chicago Minneapolis Denver Dallas Los Angeles
Seattle San Juan, Porto Rico



PROFIT

WITH PIATT COMPLETE LINE OF

OIL-BURNING APPLIANCES

Big sales, big profits, are built around the principle of the Piatt Oil-Burner. It has been proved for years on battleships. It has been improved by expert engineers.

Now it is ready for dealers who can build immediate sales winter and summer with this full line of oil-burning appliances—a water heater; a revolutionary furnace with built-in automatic control and forced-air circulation; a line of ranges large and small; complete line of space heaters—some in rich American walnut finish, others for garages and various other places made of super-steel and finished in aluminum lacquer.

Inquiries are invited from those who want to know about any part of the line, or can build a substantial business on the complete line. Territory is being snapped up right and left. Dealers see in this a most remarkable opportunity. Send the coupon today for further information.

MOTOR WHEEL CORPORATION
Heater Division
LANSING MICHIGAN

BURN OIL SAVE TOIL

PIATT OIL BURNING APPLIANCES

Motor Wheel Corporation,
Heater Division, Dept. 100,
LANSING, MICHIGAN

Send me at once, full information and profit-building plan on the Piatt Appliances. I am not obligating myself but will study the details carefully.

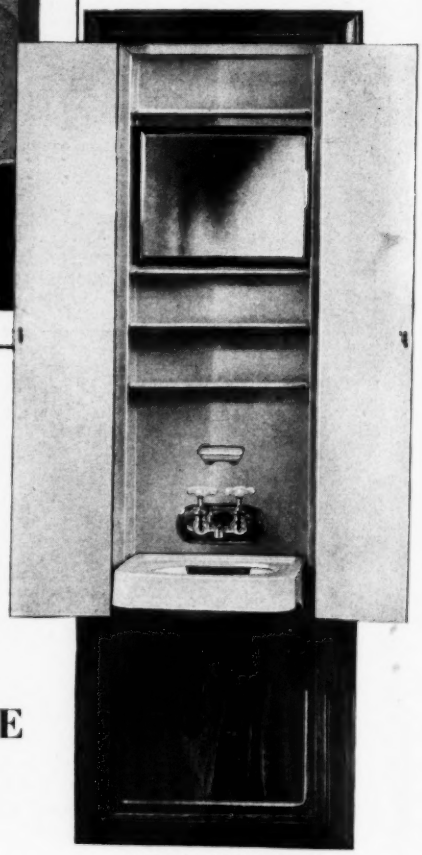
Name.....
(Please print or typewrite)

Street.....

City..... *State*.....

My Business.....

The Murphy Concealed Lavatory fastens to the wall studs and extends only 3½ inches from the wall.



Murphy Concealed Lavatory Model "B" with doors open

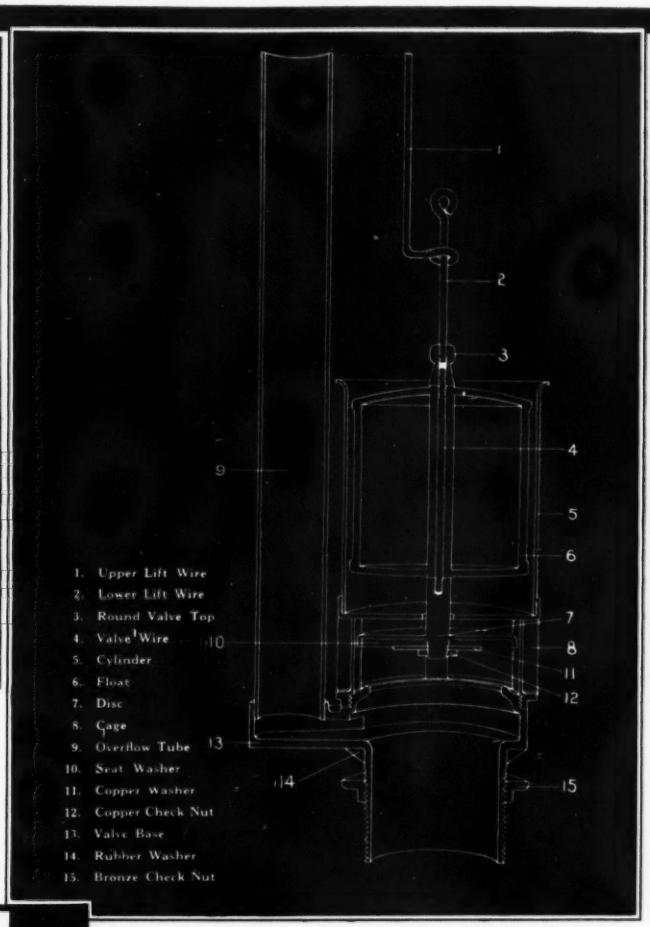
Brings Washroom Facilities *to every room ~ ~ ~ without the use of* FLOOR SPACE

Tell your customers about the new Murphy Concealed Lavatory. Have a sample on display to show them just how it is installed in the wall. Show them how the bowl swings up, emptying the water at the same time without splattering. You will find them very much interested because here is something they really need—a washroom without floor space. And when you tell them how low the cost is and how quickly and simply it is installed, you have made a sale at an excellent profit . . . If you have not had complete information on the Murphy Concealed Lavatory, write us today. Thousands of them have been installed in homes, apartments, hotels, office buildings and rooming houses. They are absolutely practical, foolproof and sanitary. Standard pipes and fittings are used. No swivel joints or flexible tubing. Nothing to get out of order. Encased in a steel cabinet, porcelain lined, with exterior finished in grain mahogany. Or you can have a baked-on prime coat to be finished in any color that is desired. Here is something new, needed, with a universal market and the profit of a specialty. Sold only through the plumbing supply trade. Do not delay. Write us now for full information before you forget. Murphy Door Bed Company, Plumbing Fixture Division, 923 S. Keeler Avenue, Chicago, Illinois.

MURPHY

Concealed Lavatory

QUIET and ENDURING



CROSS SECTION CURTIN VALVE

LEADERSHIP

Curtin leadership in the field of fine tank fittings has been effected through the production of long lasting fixtures. Curtin valves and ball cocks, with their bronze and Chase copper tube construction perform their work quietly and most efficiently, without the corrosion and wear that characterize tank fittings of inferior grade.

Specify the Curtin tank assembly for your best jobs. They withstand corrosion in sections where alkaline waters prevail.

A. F. CURTIN VALVE COMPANY

Medford - - - Massachusetts

install

CURTIN

TANK NOISELESS FITTINGS

ALL-METAL CONSTRUCTION

—eliminates the need for organized servicing

AN outstanding feature of the Smith & Wesson Flush Valve is its all-metal construction. There are no parts to deteriorate in stock or in service.

These valves have given dependable, *attention-free* service under all conditions for nearly three years, proving that *organized servicing is unnecessary.*

All-metal construction is convincing proof that the Smith & Wesson Flush Valve is keeping abreast of advancing standards in the building industry.

For Further Information Write

SMITH & WESSON

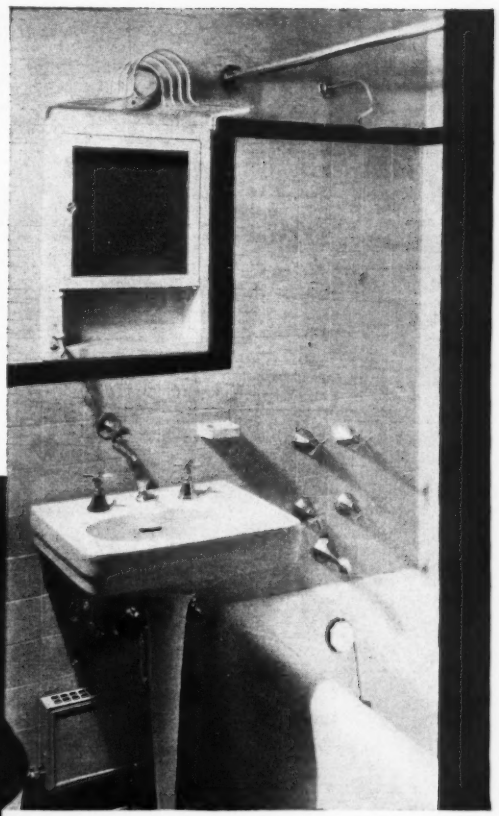
FLUSH VALVE DIVISION

SPRINGFIELD, MASSACHUSETTS

NEW YORK'S LARGEST AND MOST MODERN HOTEL

KOHLER

EQUIPPED THROUGHOUT



Typical guest bath in the New Yorker. Equipped with Kohler CHESTER *lavatory of vitreous china, Kohler* VICEROY *tub—both with Octachrome fittings, and Kohler* PENRYN *closet. Fixtures are white—walls and floors are finished in soft green and brown.*

The New Yorker was designed by Sugarman and Berger, New York architects. The contract for Kohler products was placed with the Standard Plumbing Supply Company of New York City, wholesalers, and installed by W. G. Cornell Company, New York, plumbers. The building was erected by Mack Kannor, the consulting engineer being A. E. Hanson.

A NEW and greater home-away-from-home now welcomes New York's visiting throngs. The New Yorker . . . rising forty-five stories above Eighth Avenue at Thirty-fourth Street and sinking five stories below street level . . . one of the largest hotels in the world, costing $22,500,000 to erect.

This hotel used Kohler fixtures and fittings exclusively. **Almost** 7500 units—acid-resisting baths, vitreous china lavatories and closet bowls—besides hundreds of other pieces, including ninety colored fixtures for the barber shop—all with Kohler chromium-plated brass fittings.

The quality of Kohler products and the service given by the Kohler Co. have been approved without qualification by all concerned with this notable installation, one of the largest orders ever placed with one manufacturer in this field. . . . Kohler Co., *Founded* 1873, Kohler, Wis.—*Shipping Point*, Sheboygan, Wis. —*Branches in principal cities.* . . . Look for the Kohler trade-mark on each fixture.

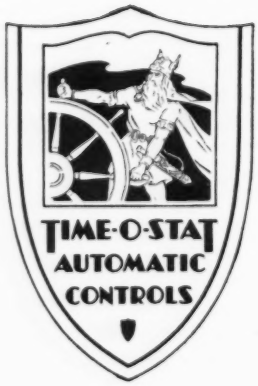
KOHLER OF KOHLER

PLUMBING FIXTURES

TIME-O-STAT CONTROLS

meet every temperature regulation need

TIME-O-STAT Controls provide complete automatic control of temperature . . . and positive automatic protection . . . for every type of heating system . . . All are accurate, dependable, and easily installed. Write for a catalog of the controls in which you are interested . . . or for information on any problems of automatic control.

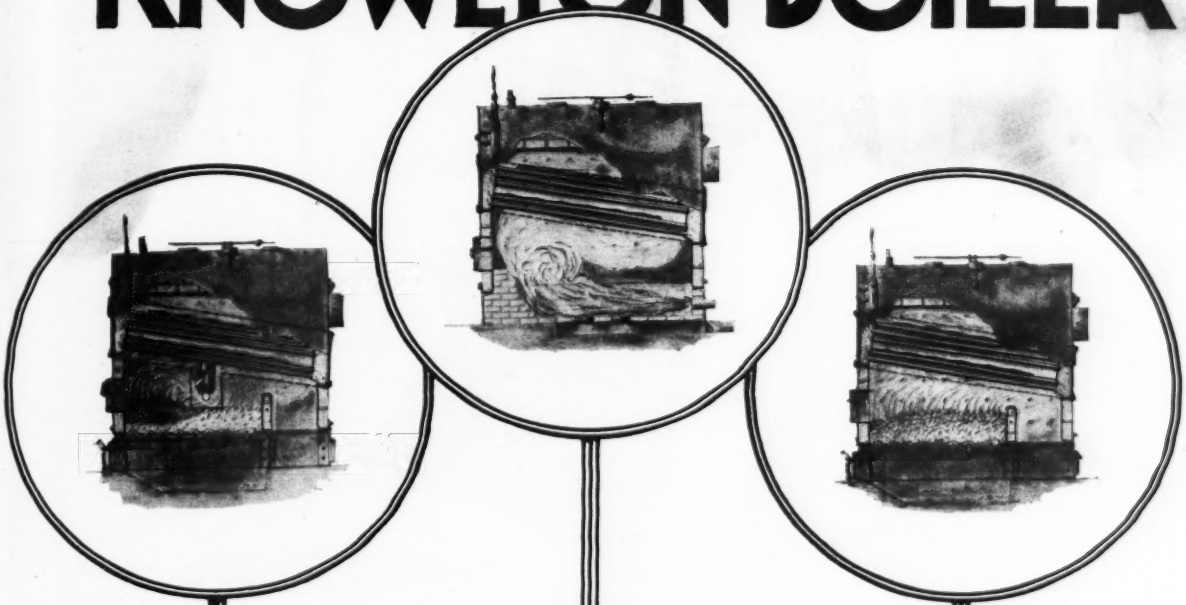


TIME-O-STAT CONTROLS COMPANY
ELKHART, INDIANA

Successor to:
Absolute Con-Tac-Tor Corporation — *Time-O-Stat Corporation*
Leachwood Company — *Cramblet Engineering Corporation*

Manufacturers of AUTOMATIC CONTROLS *for Oil Burners — Gas Burners — Coal Burners — Electric Refrigerators — Furnace Fans — Mechanical Stokers — Industrial Ovens — Ice Machines — Unit Heaters . . . . . also of Sign Flashers — Mercury Switches — Electric Heaters — Corrugated Metal Bellows.*

The KNOWLTON BOILER



Smokeless

A great amount of the smoke, in burning bituminous coal, is caused because these volatiles are not ignited and consumed. Knowlton Smokeless Boilers burn bituminous coal economically and in accordance with smoke ordinances. This is due to the advanced design of the special smokeless arch.

for Oil and Gas

Quick heat on the cycle of operation and high efficiency and lasting heat on the cycle of non-operation are essential for oil and gas burning boilers.

Knowlton Boiler equipped with special sensitive copper tubes meet these exacting requirements in every detail.

Direct Draft

Two of the greatest contributing elements to the marked efficiency and operating economy of Knowlton Boilers are the correct inclination of the tubes with right angle connection to heads, and the 50% Direct Heating surface for which these tubes are accountable.

The Knowlton Boiler is made in the proper type to handle your most difficult job. Whatever the heating requirements you will find The Knowlton well able to do the work with a maximum efficiency at a minimum of cost.

Write us for bulletins "M", "N" and "O". Destroy all other literature.

ORR & SEMBOWER, Inc.

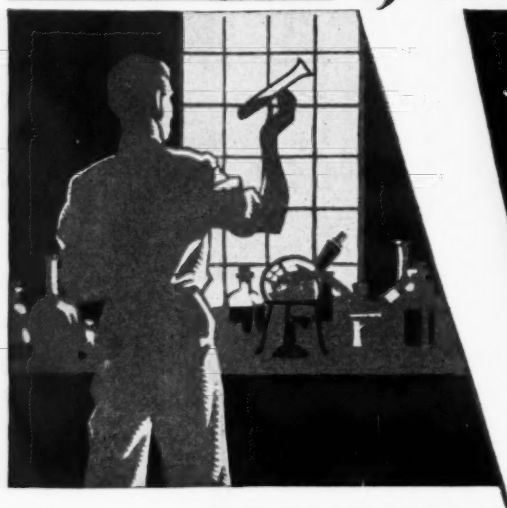
READING, PENNSYLVANIA

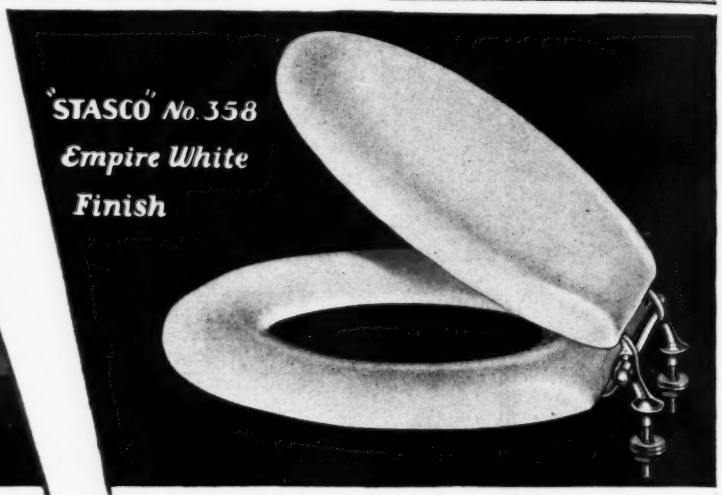
208 N. Clinton St., Chicago 50 Church St., New York

St. Louis Warehouse, 419-429 S. 12th St.

COMPLETE · HEATING · SATISFACTION

SPRAYED GLISTENING Seamless with a formula of our own ~ ~





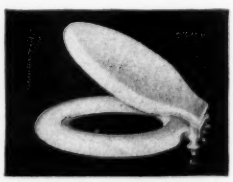
Unceasing effort to improve production methods, over a period of twenty-five years, has resulted in a *seamless* toilet seat. An absolutely sanitary seat. A seat your customers have long been looking for. A seat they will buy.

The smooth, glistening white, seamless surface of the "STASCO" Empire White Seat has no cracks, laps or joints to break, loosen or collect germs. The thick coating of sprayed pyralin easily resists moisture, so that the seat may be quickly wiped clean with a damp cloth each day — without impairing its sparkling whiteness nor shortening its unusually long life.

The "STASCO" Empire White *Seamless* Seat attracts the eye of prospects, gives long service to purchasers and assures you of worth while profits.

STANDARD TANK & SEAT COMPANY, Camden, N. J.

"STASCO" No. 360
Empire White
Designed to reduce the visibility of the nickeled hinge, presenting only the clean "Empire White" finish.



"STASCO" No. 196
Empire White
All-white even to the hinges, this seat, like all "STASCO" "Empire White" Seats, is fully guaranteed.

A Saw

A Reamer

A Flanger

A Hammer

A Journeyman's Skill

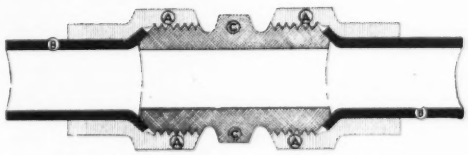
In just a few minutes, a skilled plumber can make these connections with Chase Copper Water Tubing and fittings.

You can't loosen these connections

even with 4900-lb. pressure or a 2900-lb. pull

CHASE Copper Water Tubing is the new piping for water system replacements. It is quicker to work with than anything you've ever handled. You make the connections with Chase Copper Water Tube Fittings, designed especially for this tubing.

Put a pull of 2900 pounds on this tube and fitting, and you can't drag them apart. Apply 4900 pounds pressure and you won't burst them open. You can let Chase Copper Water Tubing stand for centuries and it will never rust, because it's copper, 99.9% pure. You can freeze water solid inside a length of this tubing over and over again and you won't crack it. You can give it any heat up to 400F. (Water boils at 212.) You can bend Chase Copper Water Tubing around corners, around beams or at cross-overs. You can work it down through a wall. And yet you won't dent it easily.



CHASE COPPER WATER TUBE FITTING: *The fitting sleeve-nut (A) grips the flared lip of the tube (B) tightly against the seat of the fitting (C). There is no threading to reduce the wall thickness of the tube (B).*

Send for Free Booklet

You and your men will like to work with it because it does away with the dirty work of cutting into expensive walls and floors. You'll like Chase Copper Tubing because it's easy to sell. (Costs little more than the cheapest rustable pipe.) A new illustrated booklet gives full information about Chase Copper Water Tubing and its other advantages to you. Send today for free booklet.

CHASE

CHASE COPPER WATER TUBING

A PRODUCT OF CHASE BRASS & COPPER CO.—Incorporated—WATERBURY, CONN.

SPECIAL NOTICE

to

Plumbing and Heating Contractors

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210 Gallon, Electric

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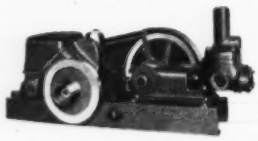
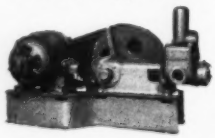
Engine-Typhoon



The F-M self-oiling engine connected by Flex-Mor drive to the self-oiling Typhoon pump. The Typhoon pump is a shallow well *duplex* pump made in sizes 600, 1000, 1500, 2500 and 5000 gallons per hour. Built to withstand 100 lbs. pressure which is equivalent to 231 feet elevation.

Motor Typhoon



The motor driven Typhoon pump. These assemblies are shipped complete (as shown) on a substantial base carefully lined up. All it is necessary to do is to connect them to the piping.

Belted-Typhoon

Pumps without the driver can be furnished where the customer already has his own engine or motor. Belt tightening idlers, assembled on the pump, can be furnished if desired.

FAIRBANKS-MORSE not only build a complete line of water systems but also are the only water system builders engaged in the manufacture of a complete line of both engines and motors used in their own attractive pump combinations.

Dealers handling the Fairbanks-Morse line sell pumps and complete combination pump and power units made by a single world-known manufacturer. This means more compact design, ready customer acceptance, undivided responsibility and a single source of supply for parts.

With the F-M franchise you can quote complete on any pump job whether it is for electric motor or engine drive. There's an F-M model and a size to meet every need—shallow or deep well. Pumps, motors and engines *all* built by one of the largest and best known equipment manufacturers in the world. Engine pumps are powered with the famous F-M "Z" Engine which enjoys a reputation for dependability the country over.

The illustrations show some of the assemblies that help to establish Fairbanks-Morse dealers as water supply headquarters in their territories. F-M pumps can be sold with or without power units. Mail this page to us with your letterhead. Get the details about the Fairbanks-Morse franchise. No obligation. **Address Dept. I-2**

FOR DEEP WELLS

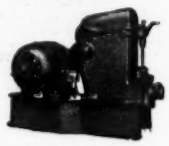
Direct-Connected

The type "DC" electric driven self-oiling deep well head. An exceedingly compact, fully enclosed deep well head available in ¼, ½, ¾, 2 and 3 hp. sizes.

Type "B" Head—Engine Driven

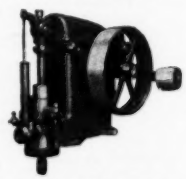
Engine driven self-oiling Type "B" deep well head. The drive is of the V-belt principle known as the Flex-Mor—Fairbanks, Morse & Co.'s own drive. The illustration shows the 1½ hp. engine connected to the 6-inch stroke head.

Type "B" Head—Motor Driven



The Type "B" head, motor driven. This head is made in 6-inch, 9-inch and 12-inch strokes in horse power capacities of from 1 hp. to 5 hp.

Belted Heads



The belted type "B" Head for use where the customer already has his driving power. The belted Type "B" head is regularly furnished with the idler as shown.

FAIRBANKS, MORSE & CO.

MANUFACTURERS, CHICAGO, U. S. A.

Branches and Service Stations *Covering Every State in the Union*

Over 300% More Cuts

with the New

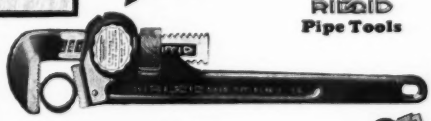
BLUE O BLADE

YOU'LL simply have to try this new RIDGID Cutter Blade to believe there can be such a tool. You'll have to get it in your hands, put it on a pipe and see the way it bites right through — quick, clean, easy — and then watch the same little "blue" blade of special alloy steel keep on cutting, day after day, for hundreds of cuts (over 300% more by actual test), sharp and *practically without burr.* And when it finally wears, you put in a new blade, as you do in a safety razor — and it costs about one-third as much as the old style wheel cutter.

Your Jobber has these new "blue" blades. Ask him.

THE RIDGE TOOL CO.
Elyria, Ohio

other RIDGID Pipe Tools



RIDGID *Pipe Wrench with the guaranteed housing, full-floating jaw, and powerful I-beam handle. You can't lock it on a pipe, it grips or releases instantly. All sizes 6-inch to 60-inch and end pattern.*

RIDGID *Vises of certified malleable with tool steel jaws that won't mar nickel pipe, are made in bench, stand, post and kit types, yoke and chain patterns.*

RIDGID *Super-Six and Super-Four for big pipe. Leverage compounded 14 times 48-inch and 36-inch wrenches, respectively. For tight joints and tight places.*

RIDGID
PIPE CUTTER

THEY MUST TEST
TO A SINGLE STANDARD...
the standard of WALWORTH QUALITY

• The line of Walworth valves today is fundamentally a quality line. • All of our products are subject to certain standard Walworth tests which assure satisfactory service. • In making valves, however, we go a step farther and test every one of them individually before shipment. • This means that when you put a Walworth valve on any line in a plumbing or heating system it will take up its share of responsibility as unfailingly as though you had picked it out and tested it yourself.

Specify
WALWORTH
VALVES
FITTINGS
AND TOOLS

for PLUMBING AND HEATING

FIG. 227 GLOBE VALVE

• WALWORTH RE-NEW-DISC VALVE • Although designed for lighter pressures than the higher rated Walworth Bronze Valves, the Re-New-Disc is a glutton for punishment. • It is solidly, ruggedly built and its renewable disc gives the valve a new lease of life time and again through years of unfaltering service. • It is recommended for steam working pressures up to 150 pounds.

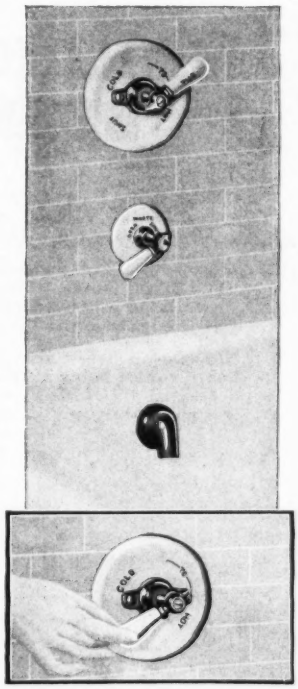
FIG. 227A ANGLE VALVE

WALWORTH

Walworth Company, General Sales Offices: 51 East 42nd St., New York
Plants at Boston, Mass.; Kewanee, Ill.; Greensburg, Pa.; and Attalla, Ala.
Walworth Company Limited, 620 Cathcart St., Montreal, P. Q.
Walworth International Co., 11 Broadway, New York, Foreign Representative
... Distributors in Principal Cities of the World ...

NIEDECKEN

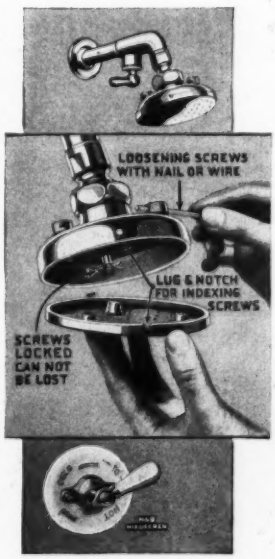
New NIEDECKEN Mixer . . . . .



Interestingly Descriptive Literature of All NIEDECKEN Shower, Tub and Lavatory Fixtures and Patented Features Sent on Request.

This newly patented NIEDECKEN MIXER for both bath tub and shower, eliminates water waste and prevents scalding and its opposite discomfort. The economic supply control can be set to a predetermined temperature and water can be drawn by the operation of *one handle only* instead of the inconvenient two valve fixture. In action, the NIEDECKEN MIXER is such as to overcome the necessity of gradual regulating water temperature, from cold to hot as regulated by ordinary fixtures. With this NIEDECKEN MIXER the water can be turned to the temperature desired immediately, and maintained throughout the flow. That the NIEDECKEN MIXER is the best device of its kind is attested by the endorsements of many leading national authorities: as most practical, most economical, most correct and satisfactory in every respect.

Easy Clean Shower Head



Write Now for Interestingly Descriptive Literature of All NIEDECKEN Shower, Tub and Lavatory Fixtures and Patented Features.

As the illustration shows: the face of the shower head can be readily removed for thorough cleaning of sediment—by merely loosening 3 small screws. A patented lug and notch act as the index for replacing the face of the shower head in proper place and correct alignment, making it as secure and perfect as when originally assembled. Obviously, this complete removal of the face of the shower head permits access for easy cleaning and *thorough* cleaning of the shower face: a decided advantage in maintaining the shower head absolutely clean, sterile and sanitary; and with the replacement accuracy and security assured keeping the face of the shower head in true alignment and of permanently enduring construction.

HOFFMANN & BILLINGS MFG. CO.

MILWAUKEE, WISCONSIN

Established Since 1855

SHOWER STALLS, SHOWER HEADS, MIXERS - BATH AND LAVATORY FIXTURES COMPLETE
FOR HOMES, HOTELS, HOSPITALS, SCHOOLS, CLUBS AND ALL OTHER BUILDINGS

MAKING BIG JOBS SEEM SMALL

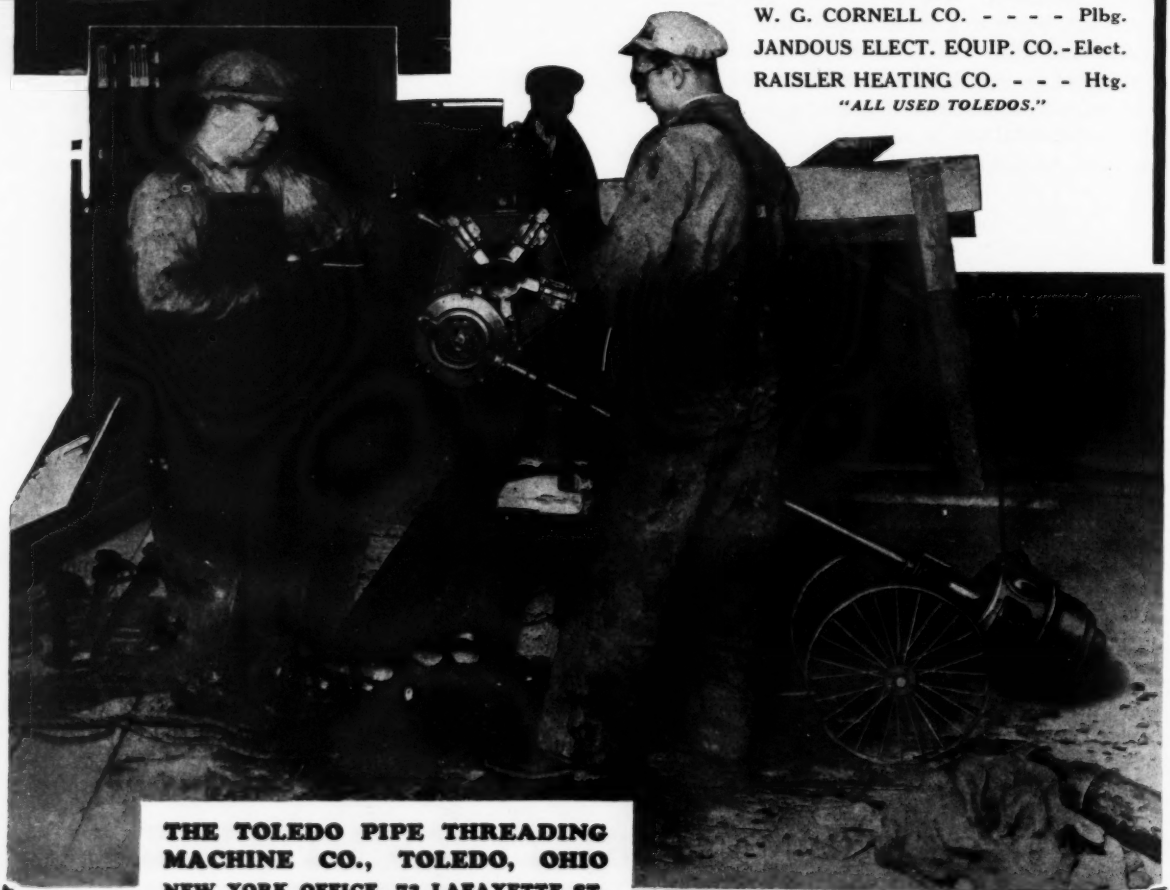
The new New Yorker,—New York's finest hotel—opened to the public January 3rd. The largest hotel in the world—47 stories.

Most of the pipe and conduit used was threaded and cut with "TOLEDO" tools. This is characteristic of "TOLEDOS." There is no job too large or too small for "TOLEDOS" not to give the best results.

Illustration below shows 4-inch conduit for the main switchboard cables being threaded by a "TOLEDO" Power Drive and a Geared "TOLEDO" tool. Send for catalog. "TOLEDOS" will also help you.

CONTRACTORS:-

W. G. CORNELL CO. - - - - Plbg.
JANDOUS ELECT. EQUIP. CO.-Elect.
RAISLER HEATING CO. - - - Htg.
"ALL USED TOLEDOS."



THE TOLEDO PIPE THREADING MACHINE CO., TOLEDO, OHIO
NEW YORK OFFICE, 72 LAFAYETTE ST.

"TOLEDO"

DOMESTIC ENGINEERING

PLUMBING AND HEATING CONTRACTING AND MERCHANDISING

Observations

Where Do We Sit?

There are so many factors contributing to the present industrial and financial situation in the United States that we feel it worth while to enumerate several matters not previously touched upon in our comments. We do this more particularly because it leads up to the situation as it affects our own industry.

We have already pointed out that general conditions are sound because of the fact that there has been no inflation of commodity prices. They represent a level which involves no speculation; aside from waste costs due to our present system of distribution, prices to consumers are as close to cost of production as is possible at the moment.

One of the best indications of the fact that there has been no speculation in commodity prices is the fact that there are no large inventories which must be reduced at a loss. When commodity prices are inflated there is a tendency to overproduce merchandise. When, as in the 1920-21 situation, the crash comes, it is necessary to work off those inventories at whatever price can be got for them. That involves actual money loss and the country feels it; it is no paper loss such as made up part of the stock market losses.

Why Conditions Are Sound

A comparison of the two largest mail order houses is interesting in this respect. In 1921, one of them had an inventory whose ratio to sales was sixty-six per cent. The other had an inventory of forty-four per cent. This year, the two inventories with relation to sales stand at fifteen per cent and twenty per cent respectively. And this is the situation in almost every industry.

Another factor which must be taken into consideration is corporation earnings and, of course, the dividends which grow out of them. The rate of earnings for fifty representative concerns in different industries for 1929 showed an increase of forty-two per cent over 1920 and thirty-six per cent over 1925; and during the first twenty-nine years of this century earnings have increased at the average rate of a little more than five per cent a year.

During the year just past one of the financial features was an unusually large number of dividends other than regular, such as extras, back dividends, increases, initial declarations, resumptions and stock dividends. And, to add to the impression of strength given here, it is noted that corporations have been adding largely to surplus to "afford a cushion against bad years and assure stability to the dividend policy."

Now, what about the situation as it affects our own industry? We quote from the monthly letter of the National City Bank of New York: "Building operations and construction work of a general character constitute the most important factor in the problem of industrial recovery. Such expenditures are the chief variable element between good and bad times, for when they are large all of the industries are active, employment is full and consumption of every kind of products is at a high rate."

Construction Possibilities

The letter then goes on to point out the fact that certain types of building were under restriction during the past year, "This, on the whole," says the letter, "has been helpful."

We have already pointed out the fact that the break in the stock market released something over three billions of dollars for use in the normal channels, one of which, and one of the largest of which, is construction work. In the opinion of all authorities, 1930 will gather momentum as the months roll around. We are assured of not less than six billions in construction work (and the foremost authority puts it at eight billions). With

easier money, and a sound general business situation, our own industry, with sound management policies, may look to 1930 to be a profitable year.

Sales Management

We have suggested before in these editorials that one of the needs of the industry is better sales management. The need flows from several causes. One of them is that there are many sales executives whose contact with the retailer in our field is exceedingly sketchy. He has not visited plumbing and heating stores for years as he did when he was himself "on the street" selling material to the contractors. Another is that too much stress has been placed on the number of accounts a salesman keeps, and, consequently, the number of calls he makes, with the result that he can do little but ask if there is any business to be had, and go on to the next contractor. He can not spend time really helping the contractor to set up his sales efforts.

There was a feeling evident at the Presidents' and Secretaries' conference in Chicago last month that contractors should look with a critical eye on the men who call on them for the manufacturer and the wholesaler. They were advised to study the salesman who knows his product, has some ideas to advance in the interests of the contractor, and who conducts his whole selling effort on a constructive plane, and to use such salesmen as standards in selecting those men with whom they will do business.

To Select Salesmen

It seems a logical requirement that a man who asks a retailer to handle his product, should be able to demonstrate to that retailer that his product has a vital place. After all, the contractor sees many salesmen, listens to many competitive stories. He could best be convinced by the man who had the ability to take him to the home of a prospective user of the product and there demonstrate that the consumer can be convinced of the value and necessity of owning it. The salesman who can not do this is certainly giving less than value received to the firm which employs him.

Something should be injected into sales management other than "talks with the boys." And that something is a more thorough training in the principles and practice of salesmanship.

Distribution Costs

The sad fact about the chase for volume is that it costs so much money for certain portions. Yet, if there are some very good accounts, they will carry the burden of that cost. The only way, according to the latest practice recommended by those who are studying costs, to know just what part of the total volume done is profitable, is to study the cost involved in carrying each account. Then, even though the total profit is fairly good, its percentage can be increased and, within limits, its actual dollar value increased, by lopping off those accounts which are a liability rather than an asset, because it costs more to sell and carry them than they produce in profit.

It approaches the ridiculous, to put it mildly, to find reported that in a study of the cost of handling small orders as compared with a group of orders five times as large, a study based on the experiences of one hundred and fifteen firms, the cost of recording the small order was 88 per cent of the cost of recording one five times as large; the small order showed a relative cost of 82 per cent for billing, 97 per cent for granting credit and 101 per cent for collection. In other words, an order five times as large would cost but little more to record, to bill and to collect.

Comparative Costs

This study of accounts and individual orders, to see whether they are bearing their share of the cost of doing business is one of the most important steps taken towards a scientific control of distribution costs. As the annual statements are being prepared, the time is proper for such a study on the part of every unit in the industry. Losses on large orders stand out pretty plainly; but the small order must not be allowed to play the parasite.

Education

A great many speakers at various meetings in the industry lay emphasis on the need for education. No doubt some of their listeners do not get a clear idea of just what is meant by that word "education" when addressed to adults who have gone beyond the age where academic training is to be thought of as feasible.

Education is not the mere process of stuffing the mind with facts; it is a training in thinking so that the individual may know how to deal with facts. The man who did not have educational advantages as a youngster has still a world of pleasant and profitable training before him. His local library will furnish him with books on the topics of most concern to him; on simple economics, on marketing, on management. Let him read the editorials in his daily newspapers, where he will see the whole process of reasoning from facts. Let him study the editorial pages of his business paper where he will see the process of reasoning from facts which directly concern him and his business. Let him attend those meetings of business men where speakers especially informed on one topic or another are to be heard. These are not difficult requirements—they are, in fact, rather pleasant, and consistent attention to them will yield the highest result of education—the art of thinking.

Education, from this point of view, becomes as much a matter of course as reference to catalogs for prices. A man does not need to be a college professor in order to be educated in this sense any more than he needs to be an architect in order to know what a blueprint looks like. He needs merely to gain a general knowledge of business which he may apply to his own.

"WE have had a number of farmers come to see us as a result of the running water campaign. . . . Much interest has been created by the radio and general campaign activities. . . . We expect to install at least twenty jobs this year. . . . Where it is not possible to install the complete system, we urge the home owner to install what we call the unit system. . . . We have found that farm work is no harder to do than city work. . . . Have always had the co-operation of the farmers in installing the systems. . . . In most cases they are willing to haul the material to their farms and furnish the common labor necessary for excavating and filling pipe trenches."

—Dick Johnson
Champaign, Illinois

By
W. W. STEVENS

Running Water *in* Every Farm *and* Small Town Home

IN this article, Mr. Stevens calls attention to the opportunity for the master plumber in the water supply plumbing installation phase of his business. Selling aids are indicated in describing the activities of the various agencies interested in improving rural living conditions. Later in the article, technical information is given explaining the several types of water supply systems commonly used. Finally, an actual job is described, telling how an old and troublesome system was replaced with a new, modern and fully automatic installation. Interesting problems met in the work are discussed and the methods used in overcoming them are presented for the information of the reader.

A farm home of attractive exterior appearance and no running water or plumbing conveniences inside shows a lack of consistency

ONE of the outstanding differences between a prospect and a suspect is that the prospect for a water supply plumbing system wants the installation and is able to buy while the suspect wants the installation but is not able to buy. Of late, the number of farm and small town prospects have increased while the number of suspects have, correspondingly, decreased. This may be attributed to various causes probably the chief of which is the government co-operative merchandising activities. In other words, the farmer rapidly is being removed from a state of mere existence which in this country is caused by individual economic conditions, to a condition of higher standards set by modern conveniences and present-day opportunities. In the majority of cases, when improvements are made, the first thought is of running water.

An example of what running water means to one who never has enjoyed the convenience before is found in a recent experience with an old Indian chieftain who, previous to his visit to New York, never had come in contact with the white man's mode of living. This old man was taken to New York on a railroad train, he saw electric lights, he rode in an automobile, he experienced a flight in an airplane, and he spent the night in a modern hotel. Upon arriving back at the reservation, he was asked what one thing he saw impressed him most. His reply was that steaming hot or ice cold running water from a single faucet at the turn of a handle is the most wonderful thing we have.

It is only natural that running

"We could not afford to pass up the farm water supply business. . . . The sale of farm water systems creates a prospect for plumbing and heating. . . . Without a water system, plumbing would be impossible. . . . If we refused to make installations the farmer would find someone else to do the work, and the result was someone else would sell the sink and other fixtures. . . . To date, we already have received additional business on last year's efforts."

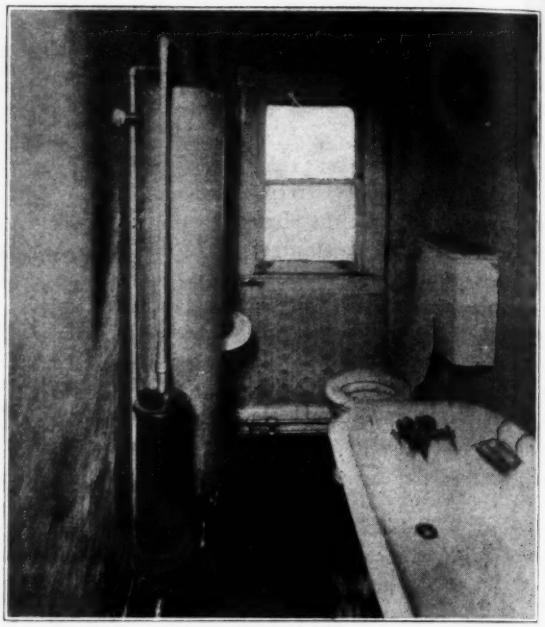
—H. F. Oekel
Morton, Ill.

water should stand first in the list of conveniences. It is a basic necessity and a person's standard of living is generally reflected in the extent of his use of it. Its use is dependent upon the quantity available, the ease with which it is obtained and its cost. Table 1, compiled as a result of extensive observations indicates the amount of water used by one person in a day under various conditions of availability:

Table 1.—Amount of Water Used by One Person in a Day

When water is carried by hand	6 to 8 gallons
1 pump at kitchen sink	8 to 10 gallons
1 faucet at kitchen sink	10 to 15 gallons
Running hot and cold water in kitchen	15 to 20 gallons
Complete plumbing and water under pressure	20 to 40 gallons

Water supply plumbing installations obviously are for the purpose of bettering the living conditions in the farm and small town home. The health, convenience and comfort of the owner is paramount. The question often has been asked, where does the master plumber enter the picture. The farmer usually is handy with tools and is inclined to be independent and get along by doing his own work. Likewise, handymen are usually plentiful in small towns. However, this one fact should be kept in mind: if it is necessary to vent a fixture in the city under certain set conditions, it is necessary to vent a similar fixture in the country if installed under similar fixed conditions. Also, a 1½-in. drain in the farm or small town home will not carry any more waste water than a 1½-in. drain installed in a city home where plumbing codes and regulations are in effect and all work is done under the direction of the master plumber. In carrying out the purpose of water supply plumbing installations, namely bettering the living conditions in the farm and small town home from the standpoint of health, convenience and comfort, it is necessary that the local master plumber who is trained in plumbing work make the installation. Out of justice to the owner who wants a correct installation and out of justice to himself the plumber should develop this phase of his business.



In addition to putting over the idea of running water and plumbing, the campaign is to encourage the improvement of antiquated plumbing installations such as is shown in this view

Type of Water System Information blank being supplied to Farm and Home Bureaus to assist them in answering inquiries on water systems.

WATER SYSTEM INFORMATION BLANK

If you are interested in a water system, fill out the following blank so that the most suitable equipment can be recommended.

(1) Check source of supply. Shallow well ( ) Deep well ( ) Spring ( ) Pond ( ) Cistern ( ) Open Stream ( )
(2) Check type of well. Cased ( ) Dug ( ) Driven ( )
(3) If cased, what size casing?_____
(4) How deep is well from ground surface to bottom?_____
(5) How far from ground surface does the water stand?_____
(6) Does the water lower when pumping?_____How much?_____
(7) How far is well located from house?_____Barns?_____Water tanks?_____
(8) Check the following:
Is your well higher ( ) lower ( ) on level with barns ( ) How much?_____
Is your well higher ( ) lower ( ) on level with house ( ) How much?_____
Is your well higher ( ) lower ( ) on level with tanks ( ) How much?_____
(9) Check the kind of water storage system you prefer.
Elevated tank ( ) Location?_____
Pressure tank ( ) Location?_____
(10) What kind of power will be used? High line (volts)_____
Gasoline engine (Name and size)_____
Home light plant (Name, size and voltage)_____
Wind mill_____
(11) Average number of persons in family_____
(12) Number of livestock to be watered daily. Horses_____Cattle_____
Hogs_____Sheep_____Hydrant for watering lawn? Yes ( ) No( )
Make a general statement of the kind of system you wish to install.

NOTE: Make a rough sketch on reverse side of sheet, showing location and distance of well from buildings to which you want water supplied.
Write to Farm Mechanics Department, College of Agriculture, University of Illinois, for the following publications:
Water and Plumbing Systems for Farm Homes Cir. 303
Sewage Disposal for the Farm Home_____Cir. 336

Agencies Co-operating in Water Supply Movement

Recognizing conditions and working to better them, in the matter of Illinois for instance, for six years or more the farm mechanics and the home economics extension service of the University of Illinois and the Illinois State Board of Health through their specialists have been teaching and demonstrating in co-operation with farm folks from one end of the state to the other, that the farm and small town home can and should be comfortable and modern as well as city homes. The national and state surveys of home equipment by the state statistician, the Department of Agriculture and the Federation of Women's Clubs have further impressed the problem of pure water and the need for water and waste disposal systems, not only in the country but in the small town. The result has been that "Running water in every farm and small town home" was unanimously voted upon at the 1929 annual

meeting of the Illinois Home Bureau Federation as one of their goals. In order to further this goal, the Illinois Home Bureau Federation and the Extension Service of the University of Illinois are sponsoring a state-wide contest for improvements in water purity and in water, plumbing and sewerage systems in the homes of Illinois.

It is significant that the purpose of this contest is not only to encourage new installations and improvements in existing installations, but to make them safe and sanitary. This, of course, is the function of the master plumber.

In addition to the two above mentioned agencies, in co-operation sponsoring this contest are the following:

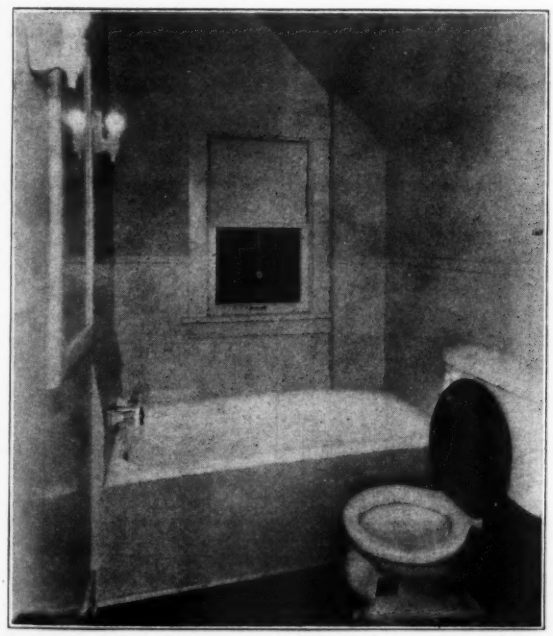
1.—Illinois Master Plumbers' Association.
2.—Farm and Home Bureaus.
3.—Plumbing and Heating Industries Bureau.
4.—Illinois Federation of Women's Clubs.
5.—Illinois State Board of Health.
6.—Illinois Household Science Clubs.
7.—Illinois State Board of Vocational Education.

It was decided that the contest should extend over a period of five years starting the latter part of April of 1929, thus it has four more years to run. The 1929 contest closed in November of last year, and the present and succeeding contests extend from December 1 to December 1 of the following year.

Plumber Benefited as a Result of Campaign

The campaign primarily is not a business building campaign for the plumber with the farmer and small town people constituting his market. As already stated, its purpose is to improve living conditions in rural sections. However, the master plumber cannot afford to overlook the business building possibilities in the movement which have been created by the fact that in order to improve rural living conditions systems, fixtures and work in which the master plumber specializes are employed. In other words, the benefits to the plumber are a result of the campaign rather than a cause.

Generally speaking, a great many plumbers are inclined to overlook or disregard the rural water supply plumbing installation field. In line with this thought it is necessary to keep in mind that if the plumber will not trouble himself to sell water supply systems, fixtures and equipment and be on the job to make the installation, there are others who will and who are. The result is usually far reaching in that in addition



This is a view of the bathroom shown on the preceding page after alterations have been made. It is unnecessary to point out the improvement over the old conditions and the subsequent advantages

OEKEL & SONS
MACHINISTS
HEATING - - PLUMBING
MORTON, ILL.
PHONE: Office, 213
Residence, 1320

Feb. 11, 1930.

DOMESTIC ENGINEERING,
Chicago, Ill.

Dear Sirs:

Regarding the campaign on "Running Water in Every Farm and Small Town Home," wish to advise that during the summer and fall of 1929 we installed quite a number of farm water systems. Without a water system, plumbing would be impossible. The sale of a farm water system creates a prospect for plumbing and heating. To date we have already received additional business on last year's efforts, such as sinks and bath rooms and in one case the installation of thirty drinking fountains for cattle. In another case we started out with a tankless system for soft water. This was followed by a system of well water for house and barn, and we recently completed an installation of plumbing and hot water heating. In years past the light plant dealer sold the water system with the light plant. We would then be asked to make the installation of pumps. If we refused to do this, they would find some one else to do this work, or do it themselves. In most cases the farmer did not understand our side of the case, and the result was, some one else would sell the sink or other fixtures.

We could not afford to pass up this business, so we sent out circulars showing and describing water systems and used newspaper ads to explain the pump as a part of the plumbing business. The result is the light plant dealer is now creating a market for us. The light plant or farm line is the first step, then the water system, after that the sale of the plumbing and heating material is bound to result. In one case we started out with the water system, and finally ended by installing an electric sink. In selling farm water systems, we do not overlook the point of fire protection, and in several cases have installed a line to the attic for this purpose. The most profitable business is to be found in farm homes already built, as there is practically no competition on this work.

I will say this, the "Running Water in Every Farm and Small Town Home" campaign movement is one of the best opportunities for the master plumber today.

Resp. Yours,
Per H. F. OEKEL.

to losing sales and work, the handy man generally makes a faulty or even dangerous installation so that when dissatisfaction occurs, the entire purpose of the system fails, with consequent disfavor for all plumbing. The plumbers opportunity lies in making a safe, sanitary and economically correct installation insuring satisfaction and improved living conditions for the owner. As an indication of the attitude of the Illinois Master Plumbers' Association toward this work consider the fact that they are one of the co-operating sponsors of the running water campaign. At their recent annual convention held at Rockford, a part of their program was devoted to a report of their 1929 campaign activities and Mrs. Pearl M. Riefsteck, in charge of the campaign for the Illinois Home Bureau Federation explained the work.

Illinois Master Plumbers' Association Activities

Mrs. Riefsteck pointed out that the bureau is an organization of home makers, principally rural women, who want to make their homes as nearly ideal as possible. She further stated that a conference showed practically all of the women wanted running water in their homes in preference to any other convenience and, accordingly, this was selected as one of the goals of the bureau.

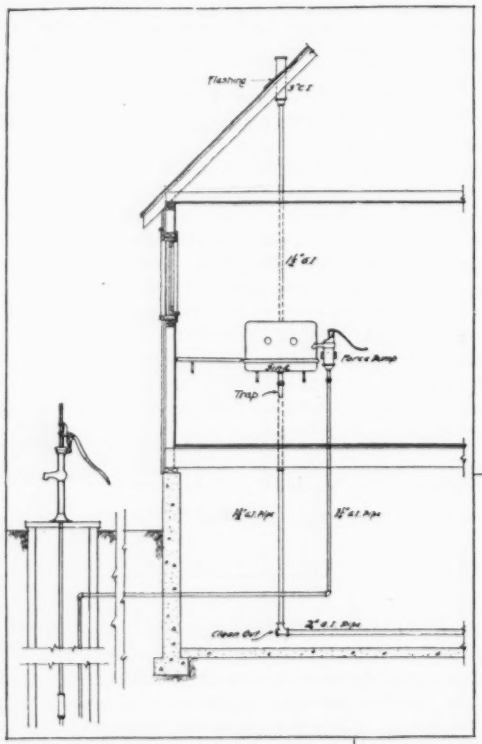
Additional impetus is given the movement by the Illinois Master Plumbers' Association by awards and discounts. In the matter of district awards, a public drinking fountain is to be placed at the county seat of the winning county by the Association. Individual winners will have a choice between cash awards, plumbing material awards or 5 per cent discount on any plumbing equipment purchased within one year from a member of the Association. A special discount of 2 per cent on any plumbing material bought from a member of the Illinois Master Plumbers' Association is made to all bona fide entries in the contest. Entry is made by means of an entry form filled out and filed by the contestant.

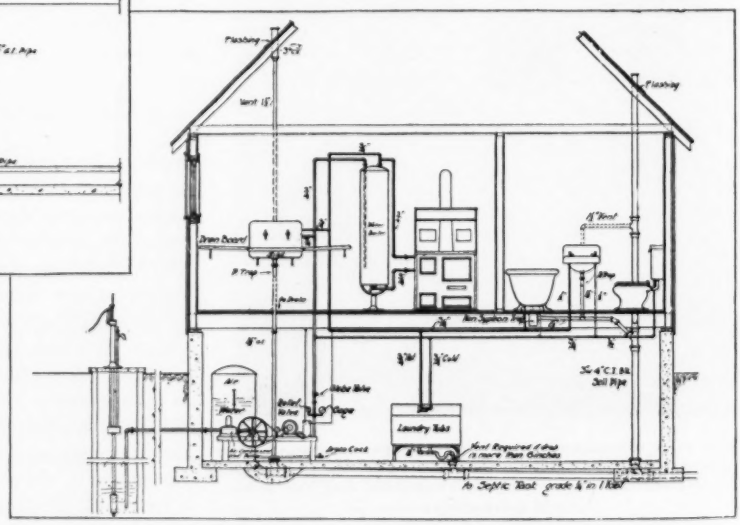
Technical Features of a Water Supply System

When making the plumbing system and water supply installation, the complete and modern installation should be kept in mind. This does not mean that you should attempt to sell, in all cases, the idea of a complete system at the start. It does mean that you should design and make allowances so that additions may be made as the owner demands. It took years to develop plumbing to its present state of excellence. It is unreasonable to expect the rural inhabitant who is using methods of 30 years ago and who is not familiar with anything better, to grasp the complete idea and make the necessary investment immediately. Accordingly, it has been found advantageous to start the farmer or small town home owner with a fundamental system giving him a sink, drain and force pump at the sink. When this has been installed, it is not difficult for the owner to see the advantages of hot water and it will be a case of adding a hot water front or back for the stove or range, or some other means of heating the water, a range boiler, a three-way valve, a faucet for draining the system and the necessary pipe and fittings.

University of Illinois Data

According to Professor E. W. Lehmann of the department of farm mechanics of the University of



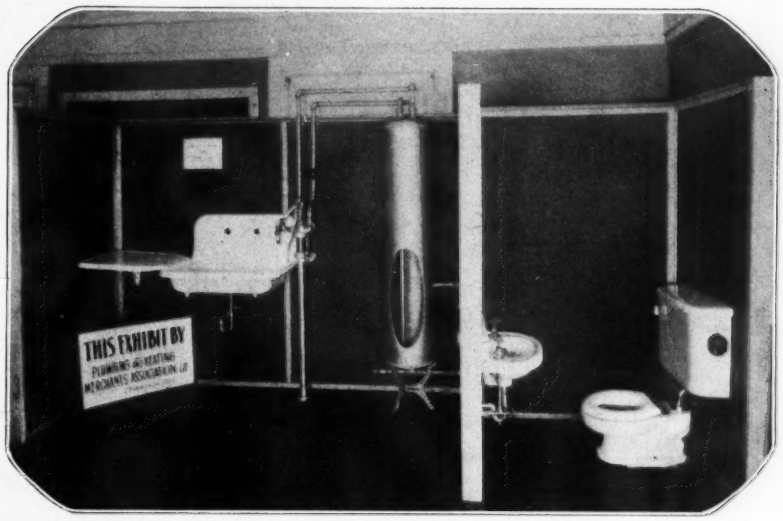


Above: Layout of a fundamental water supply and waste system consisting of sink drain and pump. Such an installation may be added to as the owner is able.

Right: The complete water supply and plumbing installation which should be the goal of all farm and small town home owners. This shows the hydropneumatic Type

Illinois in his bulletin entitled "Water and Plumbing Systems for Farm Homes," the main feature of the fundamental system is the three-way valve permitting either cold or hot water to be drawn from the same faucet.

Abstracting the above mentioned bulletin, the next step is to provide water under pressure and to add bathroom and laundry fixtures. The fixtures can be added one at a time, if they cannot all be added at the same time, but a complete plan should be made at the outset.



An illustration of what the plumbing and heating associations are doing to aid the movement. This exhibit of a simple plumbing installation was prepared and shown at the 1930 annual meeting of the Home Bureau Federation by the Plumbing and Heating Merchants Association of Champaign, Illinois

Three Systems for Supplying Water Under Pressure

To provide water under pressure, the gravity, the hydropneumatic, or the pneumatic system can be used. The kind of power available, the quantity of water needed, the source of the water supply, and other local conditions will determine which system to install.

Table 2.—Amounts Used for Some General Purposes.

Bath tub[1]	8-20 gallons each time used
Closet[1]	3-5 gallons each time flushed
Lavatory[1]	1-1½ gallons each time used
Sprinkling lawn	7-8 gallons per 100 square feet
Soaking lawn	15-20 gallons per 100 square feet
Horse	6-12 gallons a day
Cow	6-12 gallons a day
Hog	1½-2 gallons a day
Sheep	1-2 gallons a day

[1]Water for these purposes is included also in the last item in Table 1.

Gravity System Satisfactory for Many Farms

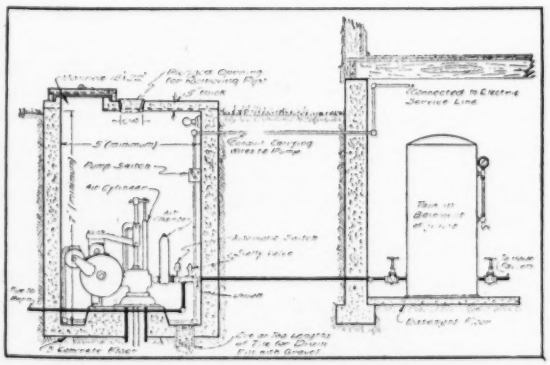
Where the storage tank can be elevated and protected without great expense, the gravity system will be found satisfactory for many farms. The simplest gravity system is one that has a tank located in the attic and connected, by means of a pipe, to a force pump in the kitchen. Having provided such a water system, complete plumbing can be installed. The size of the tank and the amount of water used will determine how often water must be pumped. Individual conditions will determine what size of tank will give the best service.

Table 2 gives a basis for estimating capacities of water supply systems according to individual requirements.

When an attic tank is used the water is commonly pumped by means of a windmill or gas engine, and when the tank is filled the overflow runs to the stock tanks. A good feature of this arrangement is that the water for the stock is pumped through the house tank, thereby keeping the house supply fresh and cool in the summer and usually preventing it from freezing in the winter.

Table 3.—Capacity of Plain Cylindrical Cisterns and Tanks.

Depth of Cistern or Tank in Feet	Diameter of Cistern or Tank in Feet								
	4	5	6	7	8	9	10	11	12
	Capacity of Cistern or Tank in Gallons								
4	376	588	846	1 152	1 504	1 904	2 350	2 844	3 384
5	470	735	1 058	1 439	1 880	2 380	2 938	3 555	4 230
6	564	881	1 269	1 727	2 256	2 855	3 525	4 265	5 076
7	658	1 028	1 481	2 015	2 632	3 331	4 113	4 976	5 922
8	752	1 175	1 692	2 303	3 008	3 807	4 700	5 687	6 768
9	846	1 322	1 904	2 591	3 384	4 283	5 288	6 398	7 614
10	940	1 469	2 115	2 879	3 760	4 759	5 875	7 109	8 460
11	1 034	1 616	2 327	3 167	4 132	5 235	6 463	7 820	9 306
12	1 128	1 763	2 537	3 455	4 512	5 711	7 050	8 531	10 152



Layout of an actual installation of the fully automatic type. The pit is underground and requires no heating in the winter. Notice electrical conveniences and the location of the manhole and the well pipe opening in the top

On many farms there may be a hill or slight elevation near the house where a gravity tank can be located. With the tank built on a good foundation a few feet below the surface of the ground, there is no danger of the supports giving way, as sometimes occurs when it is placed on a tower. There is then no freezing of pipes and the water is cool in summer and prevented from freeezing in winter. Such a tank may be made large enough to supply the entire needs of the farm.

A tank supported by masonry walls is a good arrange-

(Continued on Page 91)

View of the office of Weldon & Kelly Co., Pittsburgh, Pa.

A Record *of* Good Management

GOOD management is as much a matter of personality as it is of detailed plans. You may say of a man, or of a group of men in a firm, that they have worked out a plan for keeping stock, for speeding up jobs, for anything you like; all that can be described successfully will be the plan. It is always necessary to remember that back of the plan is the man. Orderliness in the management of a business proceeds from orderliness in the mind of the man or men responsible for the management.

When we publish stories of this type, detailing the plans by which men carry on successful businesses, we do so in the hope that here and there men may be moved to adopt some of those plans. Every time this happens, the industry has been advanced by just so much. But a man must do something more than adopt the plan. He must make it work—and here the real gain is made. Along with the adoption of an orderly plan, must go the orderliness of mind which will keep that plan in operation. That is why a great many men say that this or that plan which they have tried, has not worked out successfully. They have tried the plan, but they have not changed their habits of mind to a degree that will assure the continuance of the plan.

A Record of Progress

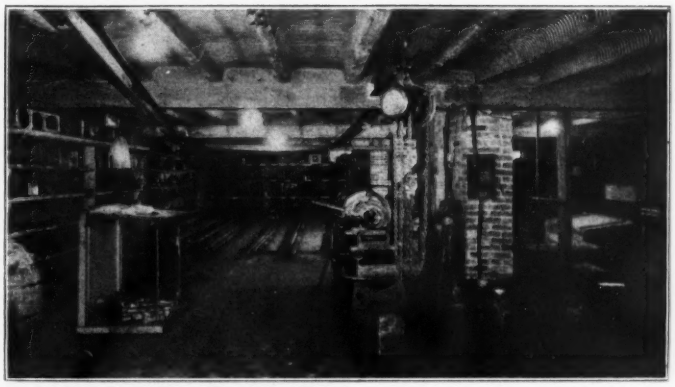
Weldon & Kelly Co., of Pittsburgh, Pa., was established in 1855, which puts seventy-five years of growth and experience back of it. In those years some interesting history was made by the company—all of it along lines of sound management—to the point four years ago when the company moved into its new building at Locust and Miltenberger streets.

The building was, of course, especially designed for the plumbing business. It measures sixty by sixty-four feet, and is of brick and tile construction with reinforced concrete floors. On one street are three display windows permitting a single fixture to be shown in each window. The shop measures thirty-six by fifty-two feet, without a partition, so that there is ample clear space for all working needs.

The basement shop and storage facilities have been laid out with an eye to efficiency. Here the bins run around the outside walls of the room instead of according to the usual practice, in rows. Thus there are no alleyways and, consequently, all stock is in a well-lighted position. There are no dark corners and no place to dump rubbish.

Stored in the bins in the following order are: Stove pipe, sleeves, sand, gravel, cement, nipples, pipe hangers, gas cans, floor drains, roof connections, flanges, flange unions, test plugs, test nipples, cast iron drainage and other fittings. Every bin is marked in large letters which can be read from practically any spot in the room.

The bins themselves measure two feet six inches in depth and two feet high and wide. No bin is more than



The basement shop. Note overhead track and chain and block arrangement. Also desk at left which can be moved around where needed

four feet above the floor, which means easy access without the use of a stepladder. The shelving above the bins is used for storing pipe covering, fixtures, pumps, etc.

Efficiency in the Shop

In making up orders the best practice in warehouses is followed. A push truck is used for the smaller items. For large, heavy material, an overhead track is available. This track makes it possible for one man to handle anything that comes into the shop, from unloading from the truck to placing in the desired spot. The track will carry a one-ton load. Four one-half ton chain blocks and one one-ton chain block are available for use in handling material.

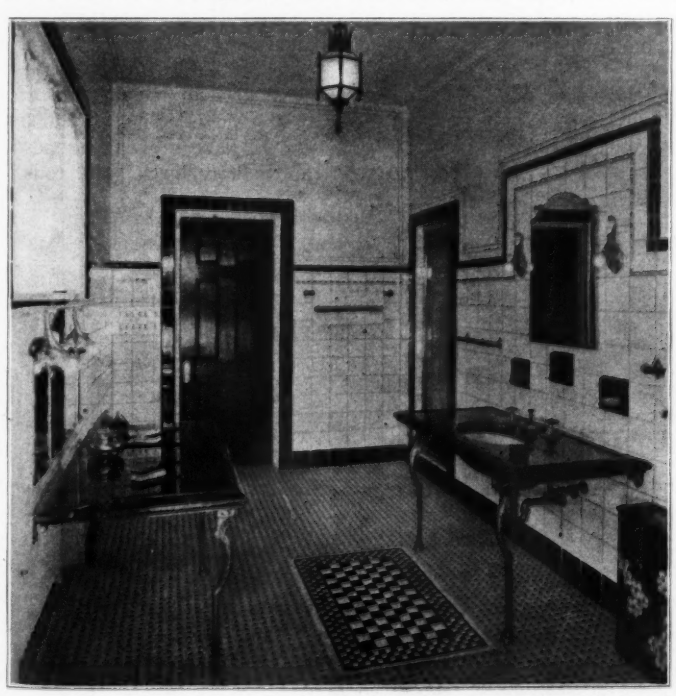
One feature of this basement shop equipment is the power machinery for two and one-half to eight-inch pipe. The machine is operated by a plumber, who is also used as an emergency call man, thus having someone always available to take care of hurry-up calls. This man usually makes a temporary repair where the damage or trouble is of some extent. Then the regular crew makes a permanent repair as soon as possible. However, if the damage is small, or necessity demands, this emergency man will make the permanent repair.

Economy and convenience are features of the arrangements for the cutting machine. Under the die head is a screening to catch the cuttings from the pipe, instead of allowing the cuttings to drop into the oil pan. Then these cuttings, and any that may have dropped into the oil pan, are put in pails which stand on a metal rack or platform. There is room for six of these pails on the rack, five of which are used for iron and steel cuttings and one for brass and copper. The pails are allowed to drain on the rack until needed. Steady cutting all day fills about four pails.

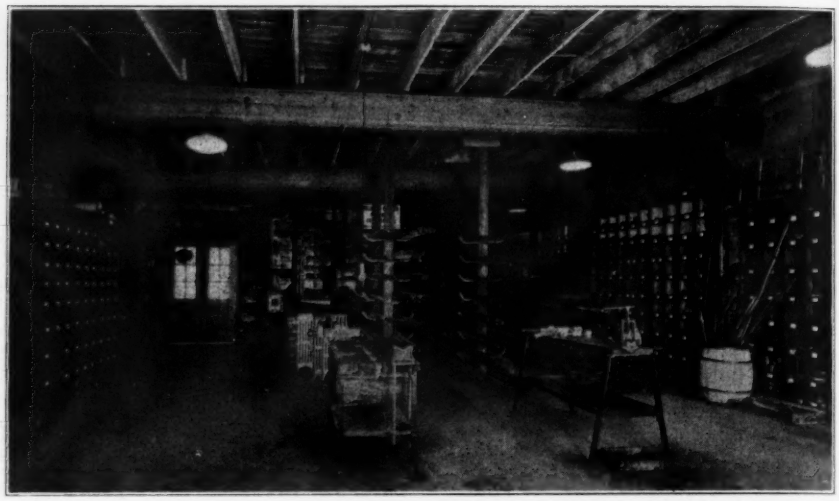
These pails have holes punched in the bottom. The drain pan on the rack also has holes so the oil can drip through to a lower pan. This lower pan slants from each side toward the center and front and the oil is run off in a pipe into a pan placed on the floor. This oil is then re-used.

Another feature in this connection which the firm has worked out is an eighteen-inch rod with a piece of leather on one end. This is used to swab out the inside of the pipe after threading. When not in use the rod is placed in a pail standing on the floor. The pail has a strainer and thus considerable oil is saved in the course of a day. At the same time, all these arrangements help keep the floor clean. A piece of wall boarding may be seen in the photograph covering the area under the machine to give a firmer footing for the plumber. This piece of wall boarding will last several months.

Referring again to the plumber who works in the shop, besides being available as an emergency man, he cuts all pipe and also fits all pipes with fittings. This, of course, eliminates



This is an actual colored bathroom installation, sold from colored drawing submitted to the prospect



The upstairs shop. Note in right center the arrangement for storing pipe conveniently

any delay on the job which might be caused by some fitting refusing to screw in properly. All fittings are arranged in the bins so they may be located promptly.

When there is no pipe cutting to be done, he can be sent out on a job. There are a number of odd jobs around the shop which only a qualified plumber can do and which, if not done promptly, serve to clutter a shop. Weldon & Kelly feel, too, that it is better to have all pipe cut in their own shop than at the wholesale house. It is then done with more care, and is more apt to be accurate. If an error has been made in the measurements, it is easier to call it in and have it corrected, which makes for better service to the customer.

On the first floor there is also a shop. Here the company has a pipe rack of its own design, angle irons being run through metal supports in such a way that pipe may be laid across the angle irons on either side of the support, thus making pipe easier to get at. On this floor also is the brass room and the estimating room.

Office Arrangements

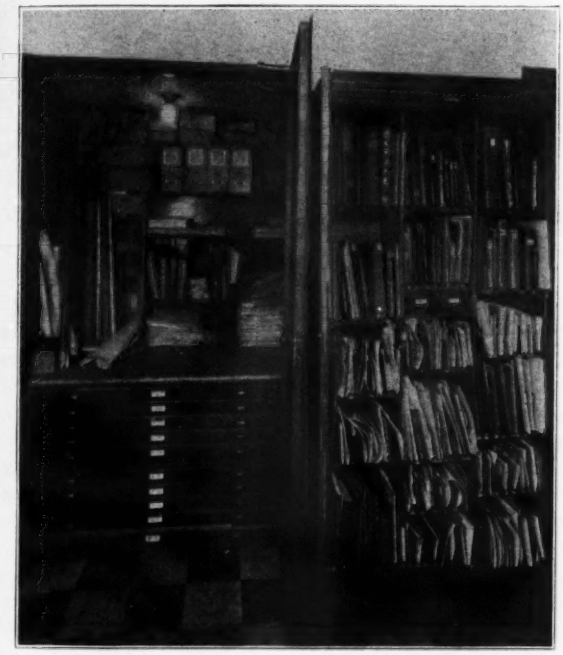
In the estimating room, as a matter of convenience to the estimating force, there is a steel cabinet, a photograph of which is shown, in which are filed all catalogs. These are indexed and cross-indexed by name and number. All blueprints are filed in long, shallow drawers. In this department everything possible is done to make the necessary reference work convenient and efficient. There is probably no greater source of wasted time than the unsystematic, chaotic storing of necessary books of reference which must be used constantly or from time to time. To be able to go to a file and locate the necessary volume helps the estimator to keep his work moving smoothly and removes the irritation of having to look all over the place each time information concerning a product is necessary.

At the head of this article we reproduce a photograph of an actual bathroom installation made by Weldon & Kelly. Concerning this photograph, James A. McKissock, vice president of the company, says: "This contract was obtained through the merits of one of our colored drawings. The fixtures shown are black and gold marble with gold plated legs. The tile work is black and white. The shower door and all metal parts are gold plated. The towel bars shown have gold plated posts and square black glass rods."

The estimating room where everything is made convenient

The colored drawings referred to are those which the company will make up for prospects in order that they may see in advance precisely the effect to be achieved. Bathroom and kitchen designs for new jobs or alterations are shown in colors. Unquestionably these drawings exercise a strong selling influence.

As conducive to greater working efficiency in the shop, there is a steam heating system automatically controlled at 55 degrees. The reason for this is that the journeymen are dressed warmly on the job and on coming into the shop to work, if the shop is too warm, there is likely to be danger of catching cold when they go out again. Naturally, being warmly dressed, they can work better in the shop at that temperature. Convenient toilet



The filing cabinets in which blueprints and catalogs, cross-indexed, are kept for convenient reference

and washroom facilities, with soap, towels, waste, etc., are in the basement. A second boiler heats the office.

As one commentator said about the building: "It is equipped with the latest conveniences for maximum production and economy to carry on the large business of the firm" which is quite in accord with the record of the company's progress. Also, as would naturally be the case with an institution so long and successfully in existence, the Weldon & Kelly organization has sent out a number of men who had learned what good business management meant in the company's shop.

◆

In the course of investigations on the slacking property of coal now being made at the Pittsburgh Experiment Station of the United States Bureau of Mines it was noted that samples from the same mine varied widely, 11 to 31 per cent in one case. The reason for this was found to be that the coal contained bright and dull coal in varying proportions and that the dull variety slacked more readily than the bright.

Mathematics of Plumbing

MANY a plumber, smart and capable in the installing of the most complicated system of plumbing, is often at a great disadvantage because of his lack of knowledge of mathematics. He may know in a general way about how many gallons a 4-inch stack will hold that is 75 ft. high, and he may know about what the water pressure would be in a test, at the foot of such a stack, but often when it comes to figuring these things out exactly, he isn't there.

It is our purpose to present in these columns an occasional set of problems especially selected for the education along these lines, of just such men.

We will present such a series of problems in this issue, and ask you who so desire, to send your answers and also your work. As soon afterwards as possible, we will devote a special article to the discussion of these problems and the answers they have called out.

We hope this effort will be helpful to many who need experience along this line. There will be others also, who will enjoy working out the problems, just for the satisfaction of getting the results. Both classes of readers are welcome to send in their work, and we expect many different methods of solution.

Sometimes we furnish information with these problems that will be helpful in working them out. In this instance, however, we are not doing this, but letting each one seek the information he may need, wherever it may be found.

We might say that most plumbing books, engineer's handbooks, etc., carry such information.

The problems are as follows:

1.—How many gallons, more or less, will be contained in a rectangular tank that is 7 ft.x 4 ft. x 4 ft. high than in a cylindrical tank 4 ft. high and 7 ft. in diameter?

2.—What size pipe will be required to fill a ½-inch, ¾-inch, 1-inch, 1¼-inch, and 1½-inch pipe?

3.—If the circumference of a circle is 28.2744 inches, what is the radius of the circle?

4.—If the total fall on a line of pipe running 180 ft. is 4 ft. 6 inches, how much will the pitch be per foot?

5.—A rectangular tank is to be lined with sheet lead. The tank is 10 ft. long, 6 ft. wide and 4 ft. high, inside dimensions. How many square feet of lead will be required?

6.—A 5-inch house drain is 45 ft. long; a 4-inch stack is 52 ft. high, and a 3-inch stack, also a 2-inch stack are of the same height. How many gallons of water will this system contain when it is tested, what will be the weight of this water, and what will be the pressure at the foot of each stack?

◆

A Complete Survey Necessary

Before oil heating equipment is installed in an existing heating plant the successful dealer knows that it is essential to make a complete survey of the heating system, making sure that the installed radiation is both adequate and properly proportioned and, further, that the boiler is of adequate size and in such condition as to make it possible for his equipment to operate in a satisfactory manner. To do otherwise is to jeopardize not only the reputation of the equipment he installs but his own reputation as well.

Examples of *Arc-Welded* Pipe Construction

By
R. T. GILLETTE

ARC welding is employed to play an important part in constructing and maintaining piping and equipment in the power station and other parts of a manufacturing plant. Mention of a few of these applications at the Schenectady plant of the General Electric Company is made to be of help to those confronted with similar problems.

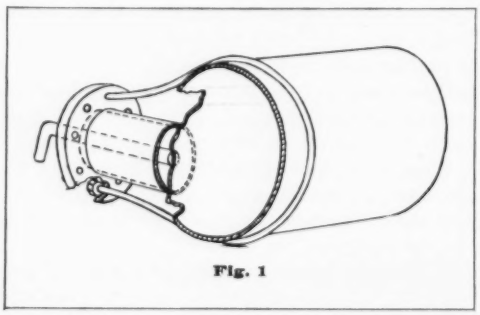


Fig. 1

Welding Exhaust Heating Mains into Header

In order to connect the exhausts of three 220 horse power turbines, used to drive centrifugal pumps in boiler feed water service, an 8-inch flanged nipple was welded to the 30-inch low pressure (25 to 45 oz.) exhaust steam line used for plant heating. This was done while the plant was in operation. The nipple was held square with the pipe by means of a clamp, Fig. 1, was arc welded into place and the clamp removed. A piece of steel rod was welded to the 30-inch pipe inside the nipple to use as a handle to remove the piece of pipe. When it was possible to shut down the plant a few minutes, a cutting torch was used to cut a hole through the pipe inside the nipple. The piece was then removed by use of the handle, and a valve was bolted to the flanged nipple. The operation of cutting the hole and bolting on the valve required only a few minutes, and the rest of the piping was done later without interference to plant operation. Fig. 3 shows a method of tapping a line under pressure without interrupting service.

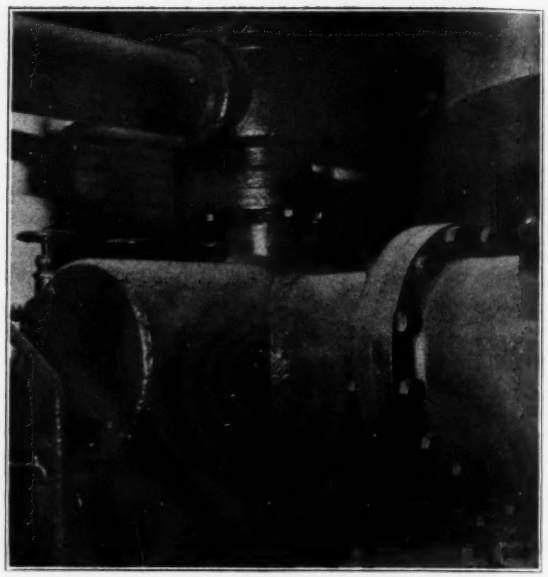


Fig. 2

Venting Air Bound Pump Intakes

In a 60-in. condenser water line with 8 to 10 ft. of head, several pump intakes located near the top of the pipe gave trouble as a result of becoming air-bound. To relieve this condition two 2½-inch nipples were arc welded to the top of the pipe and 2½-inch gate valves were screwed on them. Into the gate valve was screwed a piece of pipe with a stuffing box carrying a drill with an extension. The valve was then opened and a hole was drilled through the pipe; the drill was then withdrawn to clear the valve and the valve was closed. The drill and pipe were removed, and then a pipe was put on top of the valve, long enough so that, when the valve was opened, it would be above the water line. This successfully vented the air and no more trouble was experienced with the pumps becoming air bound.

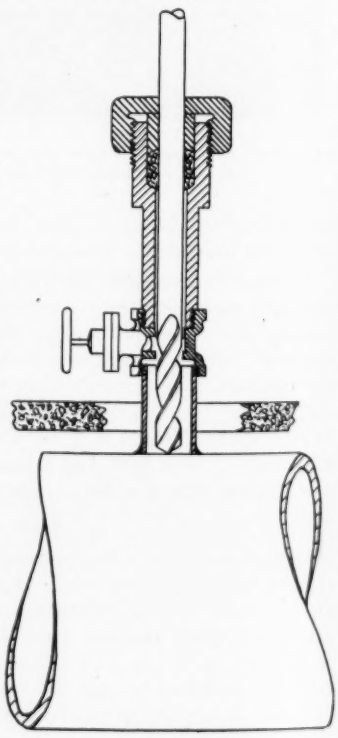


Fig. 3

Several fire pump manifolds with 12-inch headers and standard 2½-inch fire hose connections were built by

(Continued on Page 86)

This Thing Called Vacuum

By T. R. FRENCH

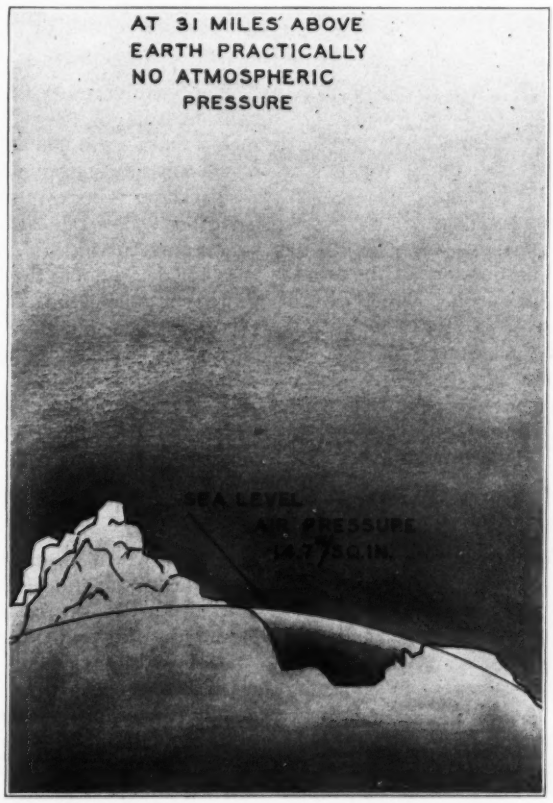
THE perennial discussion in the Plumbing Trade relative to what constitutes an effective and positive syphon-preventive in fixture traps apparently draws but little nearer a settlement than it ever has done. Experiments conducted under intended identical conditions by various interested men, apparently produce other than identical results, giving renewed life to the discussion and dissension and adding mystery to one of the simplest of Nature's laws. However, experiments in the forces of atmosphere, if identical, can only produce identical results, regardless of by whom performed. Actually there is room for but trifling disagreement and any disagreement must mean an absence of uniform understanding and procedure in experiment. A trap will be syphoned when, as and if atmospheric pressure at its outlet-side becomes reduced, by comparison with that at its inlet-side, in amount equivalent to a column of water slightly higher than trap is deep. That is to say, that the contents of the trap will be disturbed in an adjustment of the two barometric pressures to exact equality, or, evacuated completely if the differential is considerable or established abruptly.

A syphoned trap has not had its contents sucked out. Instead, the contents have been blown out by the inlet-side excess pressure in removing an obstruction in an effort to equalize pressures. Let us become more familiar with atmosphere and atmospheric pressure and venting will present no serious problems.

Air Pressure Compared with Water Pressure

In all probability man's indifference to atmosphere is related to its invisible and almost intangible nature, so different from that of its sister-element water, as we note the latter daily in the drinking-glass, bathtub or ocean. We all understand water fairly well, its forces, action under gravity and its unfailing pressure law. The submarine commander can read his position to precision beneath the surface of the sea by looking at his pressure gauges and we plumbers can prescribe correct proportion in soil, waste and supply lines for specific duty, but what plumber among us but is prone to use the rule-of-thumb in positive venting? To be certain about it we throw on a wide safety margin. In the keen competition between cities, we incline toward taking a chance or flatter our guesswork with the feeling or hope that it ought to do the work. In guessing at venting we play with a most important factor for sanitary effect of any plumbing job, in the writer's opinion.

Man's habitat is at the very bottom of an ocean of air that rests upon the wrinkled surface of our globe, where he moves about submerged completely in atmospheric air under a pressure of about 14.7 pounds per square inch, exactly as does the marine life that resides at the bottom of the sea, under a square-inch water pressure developed according to depth (elevation) at the rate of .433 pounds per foot. For all of our practical purposes it suffices to say that a column of our atmospheric air one inch square and extending upwardly and outwardly to the surface of our air-ocean, far above our heads, weighs 14.7 pounds and develops that pressure per square inch, exerting it of course in all directions here at the bottom like its countless billions of companion air columns. This factor in successful plumbing exerts itself on all men and everywhere alike and, as water at the bottom of the sea will forcibly enter the compartments of a sunken ship, so will the atmospheric pressure force air forward to fill all openings, crevices, vessels, tubes, pipes, pockets and so on, to the limit of its strength in establishing fullness or equilibrium. Wherefore, the statement that Nature abhors a vacuum and will inevitably strive to correct one, whether complete or partial. The consistent uniformity of this characteristic in air attaches something like absurdity then to variety in the practical means for circumventing its persistency. Correct practice at Miami must serve identically well at Seattle, San Diego, Quebec or anywhere else and necessity for absolute obedience to the natural law would seem to

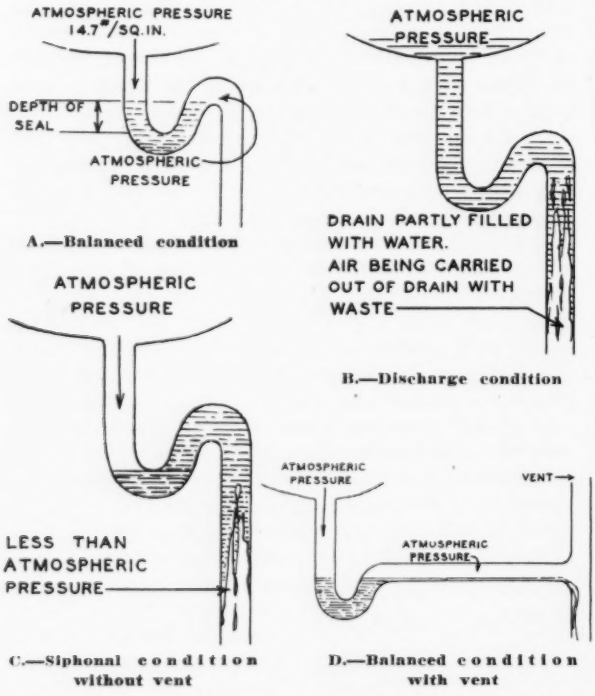


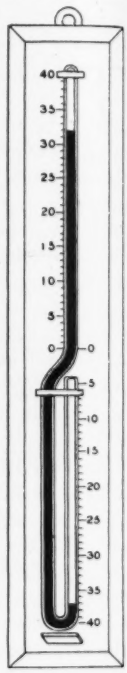
Man's habitat is at the very bottom of an ocean of air which at sea level exerts on him a pressure of 14.7 pounds per square inch. At 31 miles above sea level, the air pressure is reduced to about .002 pounds per square inch. The pressure is caused by the weight of countless imaginary columns of air

point the wisdom in uniform codings everywhere respecting the venting of traps.

Complete and Partial Vacuum

The vacuum often referred to in plumbing conversations is no vacuum at all nor anywhere near one. A vacuum, more or less nearly complete, may be said to exist when all ponderable matter such as air, water, gas and so on, has been more or less completely removed from the interior of a closed vessel. Then will the vessel be crushed by the atmosphere if its resistance to crushing will not equal the surrounding pressure of the atmosphere, i.e., 14.7 pounds per square inch. This pressure will push up a column of water 33.95 feet to fill such a perfect vacuity, or one about 125 times as high as is the water-column we establish in the average trap to baffle atmosphere's influence. Hence we may note that what we deal with is so puny a fraction of the true vacuum that it seems as well to discard entirely all reference to the vacuum and quite properly to speak of sub-atmospheric or reduced pressure at the outlet side of the trap, in comparison with the normal, or room-constant pressure at its inlet side, as within a bathroom or other place. The sub-atmospheric condition within the outlet, of course, follows the displacement of the normal air-content by a body of greater density, which in its passage forward or downward, blockades the backward passage of replacement air. The effort required of the air within the bathroom to occupy the evacuated region on the other side of the trap is so trivial compared with its ability to push water out of its way, as to prove the necessity for positive venting of plumbing traps.





A simple type of barometer for measuring atmospheric pressures. The upper end is closed and there is a vacuum above the mercury. The lower end is open so that the lower end of the mercury column is subject of the atmospheric pressure. The difference in height between the two columns of mercury represents the atmospheric pressure, and is read by adding the figures on the scales opposite the tops of the respective mercury columns

Positive Trap Venting

Trap venting, other than positive, appears as of questionable value as to its purpose. To be positive, only such a vent as will maintain perfect balance at either side of the trap can entirely suffice and its sizing and position with relation to its trap must contemplate several things, particularly flow-rate in out-falling water as established by a number of factors. Where argument follows private tests for determining the limit-length of unvented, stack-vented, or other kinds of outlet-legs on traps, obviously every contender might be considered correct according to his own experiment, difference of opinion merely proving difference of conditions of test. However, nature is always absolutely correct and the materials tested, viz., water and air, are the most consistent and obedient of performers.

The Passing of the Turkish Bath in Turkey

AN Associated Press dispatch from Stamboul, Turkey, says that American-style tubs and plumbing are driving Turkish baths out of Turkey. New Turks demand occidental tubs in the new apartment houses which are rising in clusters on the seven hills of old Stamboul, and the ancient public baths are thereby losing their customers.

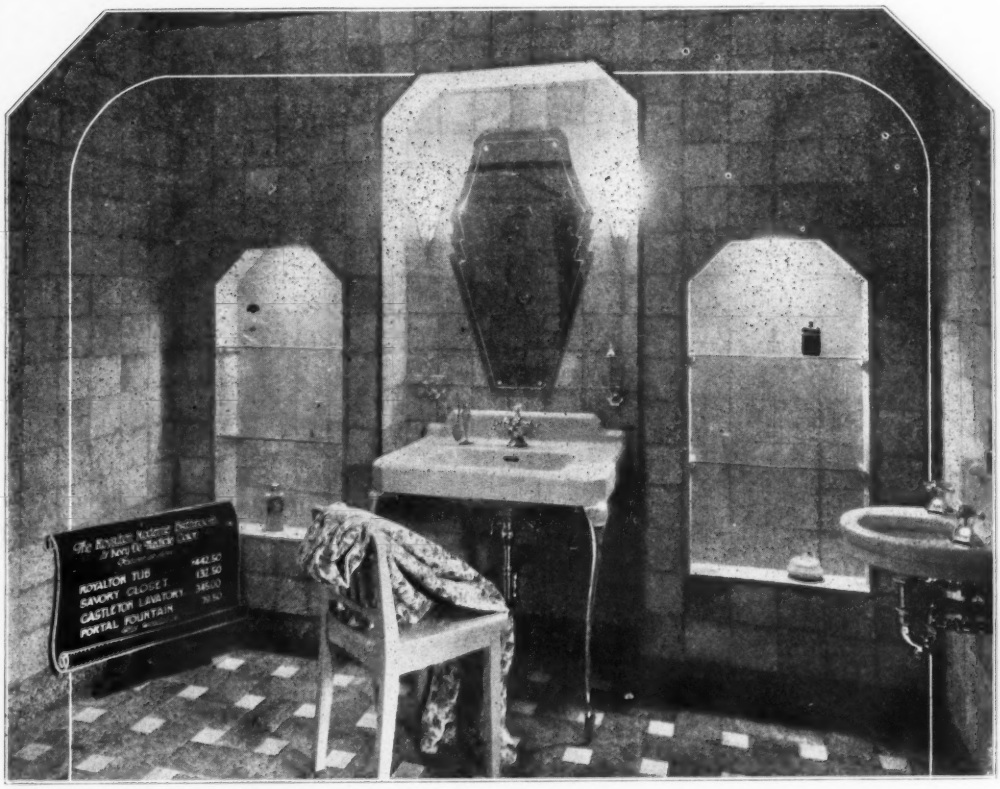
Of the 165 Turkish baths which have been thriving for centuries, only 82 now remain open. The oldest and most famous, the hamam of Mahmoud Pasha, which dates back to 1457, has smothered its great fires and closed its old arched doors. These spacious, marble-lined baths where the life of Stamboul was once at its gayest were erected for the most part by the builders of the mosques.

The Association of Stamboul Bathkeepers, an organization which has existed for over a century, has published a proclamation exhorting the citizens of the new Turkey not to forsake the paths of boiling hot, soapy cleanliness dear to their forefathers.

"The world," laments the proclamation, "is not so clean as it used to be."

While stylish Turks are exempt from this denunciation, as they boast private baths in their new apartments, the poorer and middle classes are being publicly upbraided by the hamam keepers. Customers who once came every week, they say, now appear only once or twice a year. The hamams are crowded by Moslems only during the sacred festival of Ramazan, and by Greeks only around Easter time. Unless there is a great revival of cleanliness, the last Turkish bath will soon disappear from Turkey, is the contention of the owners.

PLUMBING & HEATING MERCHANDISING



One of the beautiful model rooms in the new Baker store in Toledo, Ohio

A Model Store *and* Strategic Location

A Toledo, Ohio, plumbing and heating firm, with downtown office, establishes store with due regard for proper location and splendid display facilities

THE photographs of the displays which are reproduced with this article are of the new store recently opened by The Howard C. Baker Company of Toledo, Ohio. C. Stanley Bensing, manager of this display room, in sending the photographs wrote as follows:

"Being an ardent reader of DOMESTIC ENGINEERING the writer always looks forward to the next issue because of its wealth of material on the plumbing and heating contractor's problems—our particular problem being merchandising at present.

"We have secured lots of good ideas in your articles and illustrations on plumbing and heating display rooms, and we therefore thought you might be interested in seeing photographs of our display room formally opened last September. As we are greatly interested in the merchandising of plumbing and heating materials we would greatly appreciate your comments on same."

A Planned Display

The photographs which you see here reproduced indicate just how far

the firm went in planning this display. They had a definite object in mind—to show plumbing materials in such a way that the prospect might be able to place the fixtures, mentally, in his or her own home. From the information given by Mr. Bensing below it will be seen in what detail this plan was worked out so that the home atmosphere might be created there in the store.

THE HOWARD C. BAKER COMPANY
Contractors and Engineers
128-138 SOUTH ST. CLAIR STREET
TOLEDO

Jan. .....

Mrs. John Doe,
123 Main St.,
Toledo, Ohio
Dear Madam:

HOUSES LIKE PEOPLE REVEAL CHARACTER BY SIGNIFICANT DETAILS OF CLEANLINESS.

Replace that unsightly, unsanitary, cracked wood seat with a beautiful new seat of gleaming white which will not chip, crack, stain, or peel. Yes, they are available in plain or attractive sea pearl finishes and they fit any toilet.

The first impression counts for a great deal--how many seemingly comfortable and immaculate houses are betrayed by a shabby toilet seat. Yet this is a detriment that can be obviated in a few minutes by installing a handsome inexpensive (.....) Toilet Seat.

These beautiful Colored seats may be seen at our new Display Room or by writing or calling Main 4288.

Yours truly,
THE HOWARD C. BAKER COMPANY
C. Stanley Bensing, Mgr.
Display Room, 2204 Ashland Ave.

Another important point to take note of in connection with this new store is its location. Merchandising in our industry has developed to the point where such matters as store location are being given the same close study as in other industries. The importance of location cannot be too strongly stressed, once it has been decided to set up a display room. The problem is a bit complicated in our industry.

The plumbing and heating store must have not only passers-by, upon which the average retail store concentrates, but it must have a home market to draw upon. So that a good retail location in our industry must combine the advantages sought by the store selling staple goods, and this other need for a home market not too far distant, and, preferably, in the immediate vicinity.

Let Mr. Bensing describe the store and its arrangement in his own words:

"One of the first things of apparent interest is that our President, Mr. Howard C. Baker, has an unusual foresightness in business ways and naturally the organization has progressed step by step with other successful merchandisers in other commodities. The main office is located in the down-town section.

"The location of the display room was selected from a section of the city which has some of the best homes, filled approximately ten to twenty years ago, at an intersection used by people from an outlying district and the other is a sort of cross-town artery and is visible either way.

"When designing the show-room the primary thought was to create the habit of thinking of the bathroom and its fixtures as a beautiful and integral part of the home. The second thought was to create displays that would enable the consumer to visualize the fixtures on display as a part of his home.

The model kitchen. Note the scene painted back of the window

Model Rooms Effective

"This necessitated model rooms which are as follows: The first bath with green colored plumbing fixtures and accessories against a neutral colored background of a composition building material. This is completed in detail such as the lighting fixtures adapted for a bathroom with Venetian medicine cabinet, dummy window in back of which is an oil painting giving a view such as ordinarily is seen from the second floor. The fixtures selected for this room

are the type usually found in the average better home costing approximately $300.00 for the tub, shower, lavatory and closet. We find that this enables the prospective buyer to appreciate the small additional cost for color in plumbing fixtures.

"The second and best model bathroom is, as you will notice from the photographs, about the last word, however, not the most elaborate combination of plumbing fixtures and is as near complete in detail as possible. The fixtures are in ivory against a colorful combination consisting of a black and gold floor with a restful shade of green for the walls and the fixtures consist of a new and modern tub 36" wide, lavatory which has the aspect of a dressing table, dental lavatory, closet combination and electric heater. The brass fittings on these fixtures are of the latest hexagon design, even the accessories.

"The kitchen is carried out in a cool and restful color combination of green and ivory, the fixtures consisting of a new style gas range, electric dishwasher and sink combination, electric refrigerator and latest type of built-in kitchen cabinet.

"The laundry consists of stationary combination clothes-washer and laundry tray, clothes dryer, ironer and other modern equipment of that sort. This room is also utilized for an assorted accessory display, water heaters, softeners and is also used for our sales conference room on account of the fact that every available space is used for display purposes in our display room.

A row of neatly displayed individual fixtures, each with panel

"The basement has a hot water heating installation together with a gas hot water storage heater connected with a water softener for demonstration purposes. We are also contemplating utilizing part of the basement for display of cheaper equipment in the future.

Good Lighting Practice

"Getting back again to the entrance of the display room, it is hardly necessary to add to that which the photographs already have shown you; however we find that it has been every merchant's problem to make the back of the store receive some attention at night or when first entering same. This was overcome by displaying a colored sink over which is placed again a dummy window with an oil painting representing the rear view of a home over which were placed some indirect lights. The other space was used to great advantage by using a console humidifier over which was placed a mirror giving a homelike atmosphere and this lighted by a floor lamp. This permits us to turn off the ceiling lights except the window spots and the lights just mentioned. "We find that

THE HOWARD C. BAKER COMPANY
Contractors and Engineers
128-138 SOUTH ST. CLAIR STREET
TOLEDO

Mr. John Doe,
123 Main St.,
Toledo, Ohio
Dear Sir:

COMMANDER BYRD FLIES OVER THE SOUTH POLE.

There is no need to say anything further about Commander Byrd and his hardy crew's latest achievement. The daily papers have already told us that. The success of all great undertakings are based on preparedness no matter how trivial the detail may seem.

To combat the intense cold and give the most efficient heat for the minimum amount of fuel, the (------) heater was selected and used in the South Pole Expedition. This circulating heater is the lowest priced and best warm air heater because it circulates and not radiates the heat.

Let us send our representative who will be glad to tell you more about this wonderful circulating heater and how it can be purchased on a convenient payment plan. Just call MAIN 4288 or visit our new Display Room, 2204 Ashland Avenue near Bancroft.

Yours truly,
THE HOWARD C. BAKER COMPANY.
C. Stanley Bensing, Mgr.
Display Room, 2204 Ashland Ave.

This is one of the Baker model rooms

even with an attractive display room and well composed direct mail it was necessary to make more personal contacts by solicitation. The men selected for this work have had previous experience in the particular commodity they are selling and our organization is so arranged that a salesman selling, for instance, water heaters concentrates on that subject. However, he is duly compensated for his efforts when making sales of other items. We find from experience in order to get the maximum efficiency it is essential that we pay our salesmen on commission basis allowing a small drawing account for automobile expenditure in lean months. We find it advantageous to hook up with nationally known manufacturers, advertising those products we are handling together with independent means such as newspaper, local magazine and direct mail advertising.

The best results are obtained by our radio program broadcasted over the local station WSPD every Friday night from eight o'clock to eight-thirty, Eastern Standard Time. We are featuring a male quartette called Baker's QPS, meaning 'Quick Plumbing Service' and they particularly feature our fleet of fully equipped service trucks."

A little later we hope to give more detailed information concerning the merchandising and selling activities of this progressive institution. For the present, attention is called to the three sales letters reproduced in these pages.

Below is one of three effective letters shown in the article

THE HOWARD C. BAKER COMPANY
Contractors and Engineers
128-138 SOUTH ST. CLAIR STREET
TOLEDO

Mrs. John Doe,
123 Main St.,
Toledo, Ohio
Dear Madam:

THE FRIENDLY SMILE OF COLOR IN A SINK THAT'S FRIENDLY TOO.

Just indulge your fancy for a moment and revel in the sunlight as it pours through the window. You can readily picture this (_____) sink in your kitchen under this window.

The (_____) sink is well proportioned and so gracefully curved. Can be had in several colors which are radiant, soft and rich and glow as if with pride over their beauty.

The fittings are (_____) finish, that gleams like platinum and acid-resisting enamel which will not be roughened or pitted by fruit and vegetable acids.

You should not resist the natural temptation and make an early visit to our Display Room, 2204 Ashland Ave., where capable attendants will be glad to show these beautiful sinks and tell you how they can be purchased with a small down payment and balance on convenient terms.

Yours truly,
THE HOWARD C. BAKER COMPANY
C. Stanley Bensing, Mgr.
Display Room
2204 Ashland Ave.

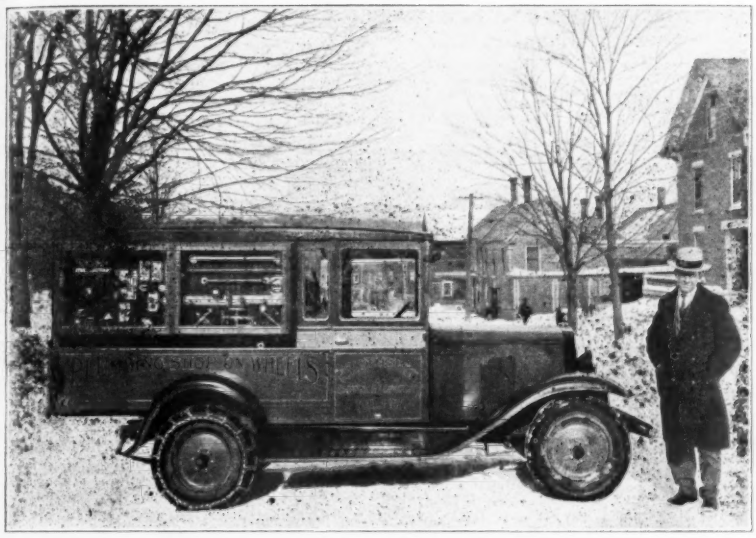
Direct-Mail Precedes Salesmen

The letter about Commander Byrd is a good example of taking advantage of a situation very much in the public mind, and the fact that the equipment offered is being used by the Byrd expedition throws something of a romantic atmosphere around it.

The other two letters are worth studying for the striking manner in which they open. Having read the first paragraph—and it is so brief in each case that it just about "reads itself" in one glance—the prospect can hardly resist going on with the letter. The arguments are closely-knit and it should be remembered that, although the invitation to get in touch with the firm closes the letters, they are sent in preparation for sales calls by representatives.

In a brief summary Mr. Bensing has assuredly outlined the answer to the question "What is merchandising?" The model rooms, the display of individual fixtures, the location of the store, the direct-mail efforts, the use of salesmen, the use of the radio —all these present a well-rounded merchandising effort, representative of the type of selling which has been developing so rapidly in the retail branch of the industry in the last decade. Nothing seems to be missed which will bring good will to the industry.

*S*ales *K*inks



Devereaux & Perkins of Castine, Maine, have cases on each side of the car shown. H. W. Devereaux writes: "We built four show cases to the side of our truck, on line with the mud guards, so that we have the same body space as was originally in the car."

The Master Salesman

allows the Master Plumber to carry on the story started in our issue of February 8

When I left my prospect, I had a confusion of thoughts to analyze. I couldn't see where I could have done any differently than I had; to have pressed my sale any further would have undoubtedly aroused an antagonism that would have destroyed what progress I had made. I felt somewhat discouraged that I got so close to a sale and failed to land the order. As I drove back to my store, I began to see less of what I failed to accomplish in getting the actual order and more of how I had worked through that conference, step by step, from a small repair job to selling a heater. That in itself was a sale accomplished. Then I was lucky enough to see those clothes in the laundry tubs, thought of a washing machine, and at least I had broken down every angle of opposition up to the point of actually selling the machine.

By the time I arrived at the store, I concluded I hadn't done a bad job after all. I had the opportunity of talking it over further that night. There was still a chance to win. I began to feel that I had reached the point where a real fighting salesman would be about getting into good form. I had played with my prospect to find out just how "set" she was.

When I arrived at the home of my prospect, Mrs. Brown answered my ring of the bell. She greeted me with: "Why Mr. Jones, are you back again?" I replied, "Yes, I am. When I left here today I felt satisfied that to let the question of that washing machine drop for the present was doing you an injustice. While I had no definite thought this afternoon of what good it would do to come back tonight, nevertheless I suggested it, because I just wanted to talk it over with both you and Mr. Brown together."

"Well, come in anyway," she said. "Mr. Brown is home and will be glad to see you, but I know he will not listen to buying a machine now any more than I would. We simply cannot lay out that amount of money at present." With this remark she led the way inside. At least, I got in the house and from now on I decided I was going to carry the fight—into their own territory. If I was licked, well—I was—and that would be that.

Entering the living room, I found Brown, whom I had met and was well acquainted with. He greeted me with—"Well, Jones, what are you trying to do anyway, stick my wife with a washing machine? If you are, I'll tell you now, old man, it won't work. She talked new car around here until I got tired hearing it and made her promise, when I bought the car, she wouldn't spend another cent for six months. So you see you haven't much hope of a sale here."

"Maybe I won't sell her or you that washing machine Mr. Brown," I retorted with considerable snap to it, "but I'll bet you a good cigar you'll buy it." "Huh! That's no bet," he came back. "If you can sell us a washing machine, you'll make enough profit to buy me a whole box of cigars and the Missus a box of candy in the bargain." Catching the humor of the moment as my opportunity to develop a pleasant atmosphere, I replied: "I'll stick to what I said. I won't sell you but you will buy a washing machine, and if you do, I'll stand for the cigars and candy, because I'll feel I will have taken enough of your good

money at one time without collecting a bet." We all laughed over the sally and I guess we quit about fifty-fifty at that moment.

Mrs. Brown was the first to start the ball rolling by telling her husband that she had already explained to me how impossible it was for them to buy a machine now.

"I was lucky enough to see the clothes in the laundry tubs"

Two or three times I was tempted to answer the negative reasons both of them were shooting at me, but something told me to keep quiet—let them "run down" like the clock and then I could make my "tick" heard. I realized it was a case of putting my head against a stone wall to try to reason with two minds negatively set on the subject. In this manner, the evening wore on for more than an hour in which I don't suppose I spoke five minutes altogether. There is an end to everything, even a woman's tongue, and a man self-satisfied that he has you beaten at your own game and my turn to talk finally came. I was all ready and set too.

"Now folks," I began; "I want you to try to believe me in one thing I am going to say first and it is this: All I came here for tonight is to explain my machine to you, show you some pamphlets and cuts of it which I have with me, prove in figures that an electric washing machine is an actual investment that will really pay you dividends on the money you put in it and that it will bring as happy a smile to Mrs. Brown's face as your new car the first time she rides in it. When I have gone over these points with you, I am going to leave it up to you to decide whether you ought to have that machine now or a year later. I promise now, that I will not attempt any insistence upon an immediate purchase if you fail to approve of what I have to say.

"In the first place, washing by the old method, whether you, Mrs. Brown, do the physical work yourself or hire labor to do it for you, is inconvenient, annoying and in creating a lot of wet floors, steam and what-not, very unhealthy. The laundress, fiddling first with the clothes on the washboard, then rinsing and all that goes with laundry work, is not as careful as you are, hence your nerves are none too good after a day spent with the laundress around and you're glad to see her go. I know my wife is never as happy on washday as some other days in the week." That made a hit with Brown. He nodded smilingly at that remark.

"I want you to look at these pamphlets. Here is a reproduction of an electric washer I have on display in my store. First note the construction. The outside casing is heavy steel with extra heavy enameling that gives not only durability, but neatness in appearance. The interior of the tank, the washer itself is steel, very heavily coated with porcelain; a finish that will last as long as the machine. The agitator is substantially made, perfectly smooth with no rough surfaces, the paddle divisions are rubber covered which adds greatly to better action and less friction when in contact with the clothes. It has a quick-emptying non-clog drain which facilitates emptying water from the washer when necessary or not in use.

"There is not a single part of the machinery and power equipment exposed so that there is no possible chance for contact with the clothes inside or outside the machine. Then there is the power wringer with the control lever in a convenient place. The rollers on the wringer are extra large and heavy. The entire machine is built to last a life time and best of all, any time in fifteen years, the company will completely overhaul and renew any worn parts at a cost guaranteed not to exceed twenty dollars."

By this time both of my listeners were very attentively looking over my circulars while I was watching them and their actions very closely. I saw Mrs. Brown look at her husband and he looked at her, both in a sort of questioning manner that I thought I had one more shot to make and I might turn the sale. Brown's next question helped me to get started.

"What is the price of this machine, Mr. Jones?" he asked. I was waiting for that question.

"Mr. Brown, what you pay your laundress will buy this machine. What I mean is, that with this washer she will do a day's washing in two hours by working in two lots. Run off the first lot, then through the wringer, and while hung up to dry, she puts in the second lot. While waiting for that to be ready to hang up for drying, she can devote that hour to cleaning up. What now takes a day to do she will accomplish in one-third of that time. With the washing and ironing as she does it now, requiring one and a half to two days, she will finish in one day.

"Now you pay her three-fifty a

day," I continued, "and by paying twenty dollars down and two-fifty per week, less than one day of her pay, you will pay for this machine in one year and never miss the money. In fact if you put three-fifty in the bank each week instead of paying her, you will have saved $182.00 in a year. The price of the machine is one hundred and forty dollars. By purchasing it and charging yourself seven dollars a week for the rent of it, paying one day's wages to your laundress, that machine will pay you one hundred and eighty-two dollars. That is one hundred and thirty per cent on your investment. I don't think you own any stock that pays dividends like that."

Mrs. Brown then interceded: "I'd love to have one of those machines," she said, addressing her husband, "but we can't afford one now."

"No," her husband replied, "I don't believe we can. You see, Jones, we don't buy on installments and we haven't the cash just now."

"But," I said, "you have purchased a thousand dollar bond for investment and not paid for it all in one payment. Or you've borrowed from your bank to raise part of it, haven't you? Why not borrow one hundred and forty dollars from your bank and let the machine pay the note?"

I saw I was slipping a bit, so I played my ace.

"Now I'll tell you what I'm going to do," I said, as though it was all settled. "I'm going back to my store, get one of these machines and bring it up here tonight. Now just a minute, please (as they started in to say 'no').

"I'm not going to sell it to you. I'm loaning you that machine for tomorrow. We will connect it tonight; I'll show you how it is operated, and if your laundress isn't out of your house by night with the whole job finished, I'll miss my guess. You don't have to keep it, but I want you to have the experience with it yourself and you judge for yourself."

They remonstrated with me, but I insisted it was a loan of the machine, not a sale, and we wouldn't say any more about buying it. I only wanted them to use it. They could buy later if they so wished.

I was taking a big gamble on the efficiency of the machine eliminating their prejudice against installments. I hadn't sold the machine yet, but I felt as though I would. At any rate I'm sticking right to them. So a little later I went to the store, loaded a machine in my truck, was back and in half an hour had it connected and in running order. I had done all I could for the present.

As I left I said, "I'll be up in the morning to show your laundress how to operate it, watch her work with it for a few minutes and I'll bet another box of candy and cigars you folks are going to have a big surprise."

Analysis

From the description the Master Plumber gives us, he had lots to think about, but he was thinking, and analyzed his progress. As in his first approach to the customer, he took himself thru the whole interview, step by step, studying everything that was done, every word almost, that was spoken. Looking for weak spots, or for a point of advantage gained and how such points could be carried further. That mental review of his work, that study of what he accomplished and where he failed is what is leading him to a successful issue.

In any sales interview, the prospect will invariably heave a sigh of relief when the persistent salesman departs, but rarely ever give any thought to a line of defense against his return. Therefore, the salesman who does a lot of thinking after an interview of this sort generally finds he has considerably the advantage when he returns for his second attack. Forgetting for the moment, the failure to land the order and building up all the good points won is strengthening morally. As the master plumber puts it, he began to feel like a fighter who had taken a lot of punishment to find out how hard his adversary could hit, and where his weak spots were. The realization that he had only failed to close and had not lost his sale gave him the courage to "believe in himself" and that he was only beginning to fight for that order. After all the analyzing, only one important negative point developed, "lack of money." That wasn't really serious either, since Jones knew they could raise the money if they so desired, or their

"So you see you haven't much hope of a sale here"

lytically, too. He realized that he had gone as far as possible and to insist any more for that time might develop a refusal to consider the machine at all. It was tactful to withdraw and skillful salesmanship to arrange to get back again in the evening. That short recess in the conference would allow the annoyance of his persistence to wear off. True, Mr. Brown might spoil the sale altogether, but it was better to have a little time to do some more thinking anyway and possibly be prepared to successfully counter his arguments as well as those Mrs. Brown had offered.

It is well to particularly note the care with which the master plumber

credit was good with him if they bought on a deferred payment plan.

As we have deduced, his thinking developed a plan of handling the evening interview; Mrs. Brown did not expect him to return and expressed her surprise when she answered his ring of the door bell. But he had made enough impression in his talk with her to cause her to discuss washing machines with her husband. That part came out in the first five minutes of his interview. Mrs. Brown's telling him she had discussed the matter with her husband and when he greeted Jones, saying, "What are you trying to do, anyway, stick my wife with a washing machine?" was enough to convince Jones that Mrs. Brown was already half an ally. Brown's emphatic denial of any hope for a sale was the very effect Jones should have looked for. And as well, that refusal to consider, fired at him before he had submitted any renewal of his sale of the machine, was evidence that Brown wasn't so set negatively himself and was trying to score the first point in his own favor. It is generally admitted that the prospective customer who will talk and keep talking can be led around to a change of opinion if what he says is carefully analyzed and transposed to combat him on his own ground.

One of the best methods of coping with the negative mind is not to argue. Agree, but in doing so keep two or three ways open to slip in with a suggestion that presents your side in a compromising manner, that the prospect sees his point permitted to stand but also cannot refuse to admit the one you set up beside it.

The master plumber answered Brown in just the right manner when he set about impressing him with the fact that he would not try to "sell." No customer likes to feel that he has been impressed or coerced by being sold. His vanity is flattered if he feels he "bought" under his personal judgment.

Mrs. Brown's carefully related review of her previous talk with Jones had every "ear mark" of a repetition of what she probably told Brown over the dinner table. Brown's smiling complaisance might be interpreted as reflecting a lot of enjoyment he was getting out of the affair. This being so, his mind wasn't frozen; at least there was a possibility that he was not as adamant as his opening remark implied. Also, Jones exercised good sales tactics in permitting Mrs. Brown to talk without offering any answer to the points she made. Letting her "run down" was the best way to have one to handle instead of two. There is an idea, too, that all she said was to prove to her husband that she had not encouraged the washing machine idea and wouldn't unless he approved. All this developed a very receptive atmosphere for Jones when his turn came.

Consider the careful phraseology of Jones' opening remarks. All he wanted to do was "explain." He kept before them the fact that he was not trying to "sell." He conveyed the thought that they would make the decision. Of course they would, but with a powerful suggestion from him in favor of the purchase.

His sales talk was opened up with a romantic description of the old style method. The slop and wet, unavoidably present, putting everyone in a bad humor; even Brown didn't find home attractive on washdays. Using his story of inconveniences as a portrayal of what people did in bygone days, he adroitly led up to the introduction of literature that contained pictures of the sanitary laundry room with the washing machine, while in operation, immaculate, sanitary and dry. No odor of steam to offend, such as permeates the entire lower floor of the household with old style equipment.

He minutely describes the construction of different parts of the machine, touching on each part in turn: not saying too much, just enough to make a complete word picture interesting but not tiring or boresome.

His sales talk is a masterpiece that reflects study and intimate knowledge of his product, a prime essential to the sale of any merchandise. He then sets the machine up as an investment above comparison with the best bond or stock ever issued. He indisputably proves the machine paying for itself out of "wages" saved on half the time of the laundress. One hundred and thirty per cent return on an investment where the profit is exclusively in the control of the investor is a pretty strong argument.

When he reached the end of his talk there was no doubt about both the Browns wanting the machine, but the "lack of money" and "abhorrence of installments" still weighed against the master plumber.

Once again in the same day he backs off and rests satisfied to defer his effort to close until another day. His offer of installment payments rejected, he plans to come back again, but this time with the machine itself. Just as a loan, however; he won't insist on the purchase. It is only a demonstration. Getting the machine there that night, set up and connected, ready for work in the morning, was apparently the "idea" he found at dinner when he was wondering how he would talk to them that night. That plan beat any demonstration he could give at his store.

We're looking forward to the result of the demonstration on washday.

If

you have ever made *a difficult sale*
you have ever lost *a difficult sale*
you are faced now *with a difficult sales situation*

Write The Master Salesman!

Steam Fittings and Accessories

By H. L. ALT

PART III

MANY standard fittings are produced in certain special designs to meet best the conditions often encountered on actual work. For instance in the common elbow there are always the ordinary or short-turn ell and the ell with the longer radius or long-turn ell patterns. The chief difference between these two kinds of ells is illustrated in Fig. 1 where both types are shown. Besides this there is the reducing ell which has a certain size of tapping (or flange) on one end and a smaller size of tapping (or flange) on the other end. Such elbows are used sometimes on steam uptakes from boilers at the top of the vertical pipe, the idea being to use a large vertical pipe so as to reduce the steam velocity and to allow any entrained water to fall back into the boiler. At the top of the riser the pipe safely may be reduced in size because any water which passes over the elbow at the top and into the horizontal boiler runout will be carried along in the horizontal pipe toward the steam header by the flow of steam in that direction.

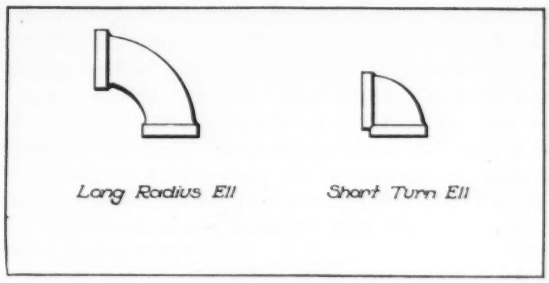


Fig. 1—Long-turn and short-turn ells

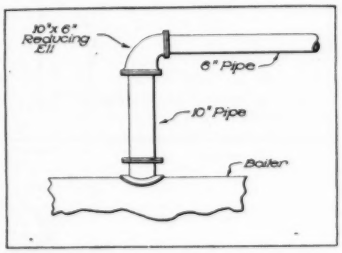


Fig. 2—Reducing ell used in connection with a large vertical pipe which lowers steam velocity and allows entrained water to fall back into the boiler

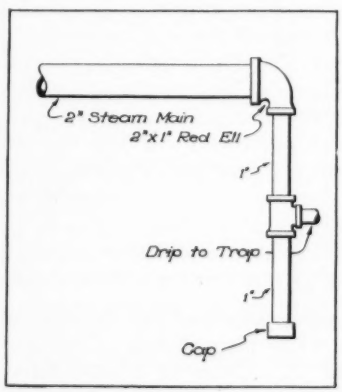


Fig. 3—Reducing ell used on end of steam main

Therefore any water which is not released in the vertical riser need not be humored when the horizontal runout is reached. A typical example of the use of such a fitting for this purpose is shown in Fig. 2.

Another use for the reducing ell is found at the end of steam main where the drip is connected. If a full sized ell is turned down to form a drip it must be bushed or a leg unnecessarily large must be used. On the other hand a reducing ell takes care of this reduction automatically and makes a very neat drip connection as illustrated in Fig. 3.

A similar use for the reducing ell is found on heater return connections which must come out the full size of the return tapping (2½-inch or 3-inch, according to the height of the heater section) and a reducing ell on the end of the heater nipple turns the condensation down into a dirt pocket with a tee above the dirt pocket to which the trap is connected.

Still another special form of the ell is that known as the base ell which is an elbow under which a base plate is constructed, the base plate being connected to the ell by ribs of metal and the whole made in a single casting. These ells are used most frequently at the bases of large risers and are often provided with drip connections to take care of any water which may accumulate at such a point. See Fig. 4.

Tees are also constructed with a base under them in much the same manner as the elbow as will be seen by referring to Fig. 5. Their principal use is on large lines where vertical risers come directly out of the top of the line; in such cases the weight of the riser (or, at least, a portion of it) is carried by the tee and the tee is prevented from being depressed by the base on the bottom,

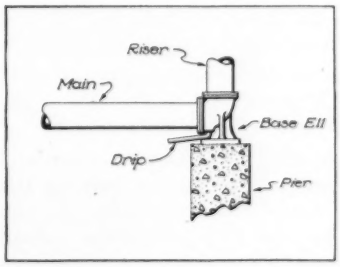


Fig. 4—Base ell placed at the bases of large risers, usually provided with drip connections

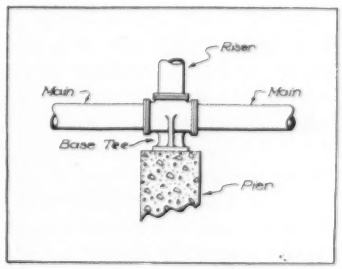


Fig. 5—Depression of the tee is prevented by the use of the base tee

which is set on some type of substantial support, such as a brick or concrete pier.

Tees are also constructed with side outlets although such patterns are little used. Ells with a male thread on one end and termed street ells may also be obtained. Another odd type is the eccentric tee which has a smaller tapping on one end of the run and allows the line to reduce in size without forming pockets. Offsets are also produced but are often excluded in first class work.

Drip Pockets

Drip pockets are constructed of reducing ells, tees, caps and pipe nipples. Like everything else there is a right way and a wrong way to make up drip pockets; the size of the pocket runs anywhere from the full size of the main down to about half of the main diameter. The greater the amount of drip which a drip pocket is expected to handle the larger should be the size of the pocket both in diameter and length.

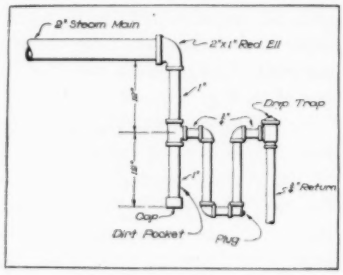


Fig. 6—The size of the drip pocket runs anywhere from the full size of the main down to about half of the main diameter

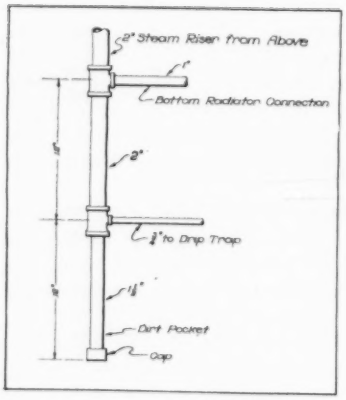


Fig. 7—Drip pocket for a down-feed steam riser

One of the best types of drip pockets for horizontal mains is to carry the main a couple of feet past the last connection; then turn down with a reducing ell and nipple, insert the tee for the drip connection, extend about 12 inches farther down for a dirt pocket and cap off. This is illustrated in Fig. 6.

At the bottom of a down-feed steam riser the riser should be carried full size past the last radiator connection and down at least 12 inches before the drip tee is inserted; then the regular dirt pocket may be put in below this as indicated in Fig. 7. For an up-feed riser the drip pocket may be formed in a very efficient manner by using a tee instead of an ell at the bottom of the riser and connecting a nipple to the bottom outlet of the tee below which is placed the drip tee and dirt pocket in regular manner as shown in Fig. 8.

Swing Joints for Expansion

Swing joints are made up from ells and nipples and to get real benefit from these there must always be two points where the expansion piece can turn on the threads. A swing joint with a nipple at one end and a solid fitting at the other is of very little use in taking up expansion. Care must be taken in using swing joints to allow for the position which the joint will take when hot as well as when cold. If the pitch of the swing piece is not made great enough in the cold position to allow for the expansion of the pipe without losing all of the pitch, trouble from condensation and water hammer is liable to result.

A simple form of swing joint is shown in Fig. 9 and it will be seen that either end (or both ends) of the line can move back against the swing piece and that the only result will be to turn the swing piece slightly on the pipe threads at "A" and at "B". Now, if a solid fitting (without the nipple to turn on) is used at either "A" or "B," then the whole swing piece is held rigid by this solid fitting and the only result of expansion would be to spring the swing piece and not to turn it. This defeats the whole aim of the swing joint and brings such a severe strain on the solid fitting as to rupture it in some cases.

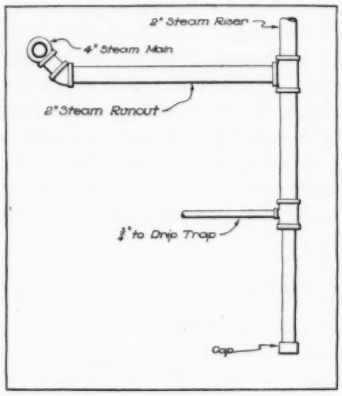


Fig. 8—Up-feed steam riser drip pocket

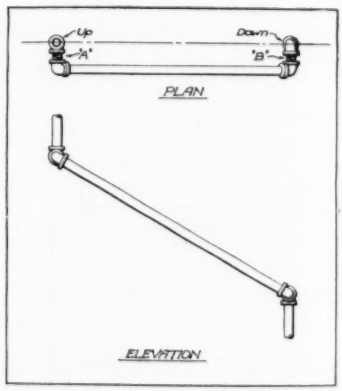


Fig. 9—A simple form of swing joint

Pipe Bends for Expansion

The use of pipe bends to absorb expansion is ideal from many standpoints—if the space conditions are such that a pipe bend can be accommodated. Unfortunately, in many instances, pipe bends are impossible on account of the room which they require. They have the ad-

vantage, however, of not having any turning threads to loosen up or wear and they make a job which is absolutely tight.

Pipe bends are supplied by many manufacturers all bent to dimension and it is possible to obtain bends of almost any design at a very reasonable price. One of the chief things entering into the use of pipe bends is the radius of the bend necessary which, of course, determines the amount of space the bend will occupy.

A very simple rule, which is also a perfectly safe one, is to make the radius of the bend in feet equal to the radius of the pipe in inches. Thus a 6-inch pipe would have a radius of 3 inches and a pipe bend made of 6-inch pipe would, therefore, have a radius of 3 feet, while a 3-inch pipe which has a radius of 1½ inches would require a bend of the same size pipe to have a radius of 1½ feet, or 18 inches. While it is possible to have pipe bends made of smaller radii than the above rule shows, in many cases it is not desirable owing to the danger of wrinkling the shell of the pipe on the inside of the bend.

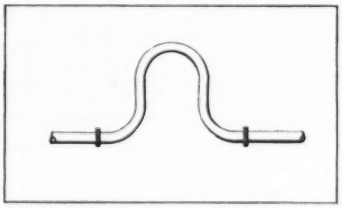


Fig. 10—One of the most common forms of expansion bends is the U-bend which is sometimes made up of 90-deg. fittings

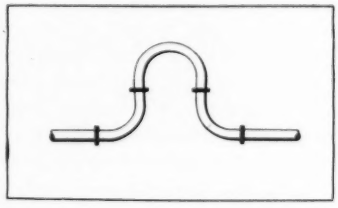


Fig. 11—When the lineal feet of pipe in the bend does not exceed about 20 ft., a compound bend may be used

It also should be kept in mind that a foot or two of straight pipe beyond the end of the radius is desirable although this, too, may be made less in tight cases; it should never be less than the diameter of the pipe in any instance.

Pipe bends may be divided into simple bends and compound bends; the simple bends are those having only one continuous arc in the bend while compound bends have more than one arc and sometimes even bend in two different places.

Where bends are used for expansion purposes the most common form is the U-bend which sometimes is made up with 90-degree fittings on each end but which is much more effective when combined with two quarter-bends, as shown in Fig. 10, instead of the fittings. When the lineal feet of pipe in the bend does not exceed 20 ft. (or a trifle over) a compound bend such as is shown in Fig. 11 may be used. On all larger sizes of pipe the radius will be found so large as to make it necessary to make the bend in more than one piece owing to the lineal feet of pipe in the bend exceeding the measurement of a standard length of pipe.

It is important to arrange the joints in a bend (when joints are necessary) at points where the flanges will not be subjected to bending. As a general rule the joints should come in the straight lengths between the arcs, and never should be in the middle of the bend.

Bends should be anchored in the center (that is the U type) although if unequal expansion is to be taken care of this anchor is better omitted.

Theoretically an expansion bend should be located midway between anchors; practically this is not always possible. When the length of run is longer on one side of the bend than it is on the other the bend will be compressed and driven slightly toward the short end when the line is heated up. Of course the cause of this is the greater amount of expansion occurring in the longer length of the pipe.

Some engineers prefer a bend made as shown in Fig. 12 considering that this is more flexible than the U-bend

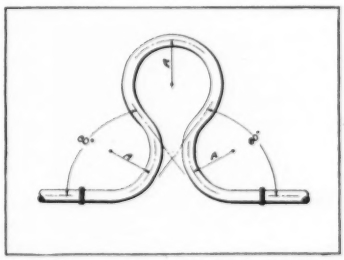


Fig. 12—A type of bend which receives preference by some engineers

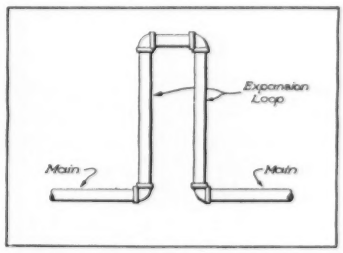


Fig. 13—In this bend, the spring of the pipe is depended upon to take up the movement in the pipe

with the two 90 deg. bends shown in Fig. 11. It must be admitted that there is a greater length of pipe to spring in this type of bend and for this reason it merits consideration. One of the difficulties in the use of such a shape of bend in larger sizes of pipe is the uncertainty as to just where to locate the joints in the bend so that the joints will not also be subject to bending strains.

Spring Pieces for Expansion

Expansion in steam and hot water mains also is taken care of by the use of spring pieces in which the spring of the pipe is depended upon to take up the movement occurring in the main line. Such spring pieces exist at the corners of the main where it turns at right angles and may be introduced in the straight run of the main by means of loops such as is indicated in Fig. 13.

When so arranged the spring of the straight pipe is expected to be sufficient to take the movement produced by the main and it will be seen that on the larger sizes of pipe the loop must be longer for the same amount of movement than on smaller sizes because the larger pipe is much stiffer and, therefore, is more difficult to spring than in the smaller diameters.

The Lift Fitting

In vacuum heating it sometimes develops that it is very desirable or even necessary to raise the return either to

clear certain portions of the construction or to reach the level of the inlet to the vacuum pump. In such cases the so-called lift fitting is used; this fitting is placed at the bottom of the riser and then the pipe is carried up vertically a distance which is slightly greater than the actual amount of lift. On the top of this riser is placed a 90 deg. elbow and then the line is brought back to the proper level by means of two 45 deg. ells as illustrated in Fig. 14.

Lift fittings also may be constructed of standard pipe

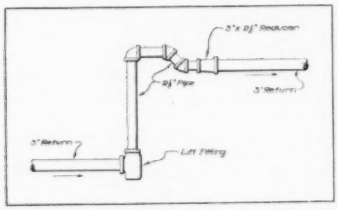


Fig. 14 — Method of using a lift fitting in vacuum heating

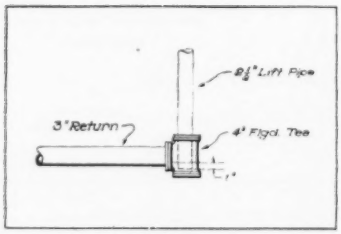


Fig. 15—A lift fitting made of standard pipe fittings and bushings

fittings and bushings in the following manner: a straight tee two sizes larger than the return pipe is bushed on the outlet down to the size of the return line and into this bushing the return line is connected.

The run of the tee is turned vertically with the bottom tapping plugged and the top tapping bushed to one size smaller than the return line. Into this bushing the vertical pipe is screwed with a running thread of sufficient length so that the bottom of the pipe terminates just a trifle below the bottom of the return main. At the top the treatment is the same as with the regular lift fitting. A lift fitting constructed by means of a tee and bushings is shown in Fig. 15.

Hartford Loop

Another very interesting application of pipe fittings is in the construction the Hartford water line connection for heating boilers which is more popularly termed the underwriters loop or the Hartford loop. This connection is the method recommended by the Hartford Steam Boiler Inspection and Insurance Co. for connecting returns to heating boilers without the use of checks and in a manner which will prevent the water being backed out of the boiler.

The simple Hartford loop as applied to a single boiler is illustrated in Fig. 16 and it will be seen that it consists of a syphon but the syphonic action prevented by a balancing pipe connected to the top of the bend. The essentials of this loop consist of having the balancing pipe connected either direct to the steam space of the boiler or to the steam pipe from the boiler on the boiler side of all valves. The return is brought back to the boiler below the water line and is raised up to the water line where an elbow and short horizontal nipple are placed. This terminates in a tee to the top outlet of which the balance pipe is connected and from the bottom outlet of which the return condensation pipe is run down and connected with the boiler inlet tappings. It should be noted that the center line of the top pipe of the loop should be exactly level with the normal water line of the boiler.

Where two or more boilers are used in battery this connection is modified as shown in Fig. 17 and it will be seen that while no checks are used it is necessary to use

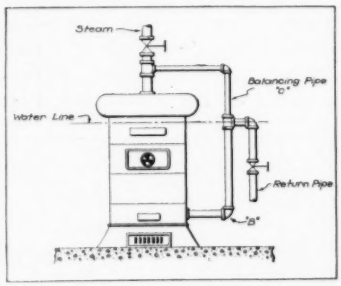


Fig. 16—The Hartford loop, being a siphon in form with the siphonic action broken by a balancing pipe

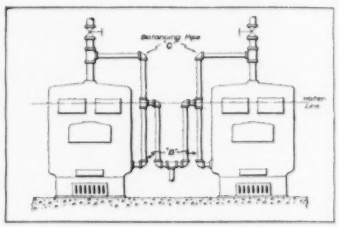


Fig. 17—The Hartford loop applied to an installation of two boilers

two stop valves in order to be able to shut off one boiler when desired. When drips are installed on the main header they may be connected into the horizontal cross connection near the point where the main return enters.

The sizes of the balancing pipe "C" are determined by the grate area in accordance with the following schedule:

Grate Area	Size of Pipe "C"
4 Sq. ft. or less	1½ Inches
4 Sq. ft. to 15 Sq. ft.	2½ Inches
15 Sq. ft. or more	4 Inches

It will be found in some cases that this schedule will produce a larger size of pipe "C" than is required by the size of the boiler return connection "B" or the main return line. This is particularly true where a vacuum pump is used and the main return line to the boiler is formed by the vacuum pump discharge line.

◆

Oil Wells Drilled in the Ocean

Oil from the bottom of the sea is now being pumped into reservoirs from three unique under-water oil fields on the California coast. Huge wharves, a quarter of a mile long, reach out into the Pacific to support the derricks used in plumbing the ocean bottom for petroleum. Within a distance of twenty-five miles, along the coast in the region of Santa Barbara, the operators of two new fields and an old one—the famous Summerland field—have invaded the sea in search of oil and rich new deposits have been found in the shale below the breaking surf. It was at Summerland, a few miles east of Santa Barbara, that the first drilling in the ocean was done in the United States.

Much Engineering Information Acquired at 1930 Annual Meeting of A. S. H. V. E.

PHILADELPHIA, the scene of the thirty-sixth annual meeting of the American Society of Heating and Ventilating Engineers, January 28 to 31, reported in part in the February 8 issue of this publication, provided for study many examples of advanced practice in air conditioning, heating and ventilating. Visits to these installations, as well as to plants manufacturing air conditioning, heating and ventilating equipment, enabled the members to acquire much valuable information. This with the exposition at the Commercial Museum, where nearly 300 concerns exhibited their products, and the technical papers were presented during the four-day meeting, made the meeting, from every point of view, the most successful ever held by this society.

Among the examples of advanced engineering practice studied by the members were installations of air conditioning equipment in theaters and large stores, air conditioning which is developed to a fine degree in Philadelphia's many textile mills and air conditioning for cigar making, knowing that Philadelphia has in operation approximately 20 per cent of the air conditioning equipment used in the cigar industry in the United States. There were large heating projects for industrial plants, as well as many ventilating and piping enterprises, that were novel, interesting and informative from an engineering point of view which were visited and came in for discussion between sessions.

Association for Correlating Thermal Research

The Association for Correlating Thermal Research was organized in May, 1928. The purpose was to prevent the duplication of effort in this field. Up to the present time more than 4,000 pieces of literature dealing with thermal engineering have been indexed. A report of the progress of this association was made by J. C. Fitts, assistant secretary of the Heating and Piping Contractors National Association.

Information regarding the index may be obtained from the research laboratory of the American Society of Heating and Ventilating Engineers, Bureau of Mines, Pittsburgh, Pa.

Analysis of Technical Papers

It was estimated that the technical papers presented were devoted approximately 40 per cent to heating, 20 per cent to infiltration and air movement, 20 per cent to ventilation, 10 per cent to air conditioning and 10 per cent to piping. Some of these were analyzed in the issue of February 8. Following is a discussion of the character, practical value and engineering principles of the remainder.

Effects of Air Velocities on Surface Coefficients

This paper, by Frank B. Rowley, A. B. Algren and J. L. Blackshaw, which relates to the effect of air velocities on surface coefficients, is the result of a part of the co-operative research work between the American Society of Heating and Ventilating Engineers and the University of Minnesota.

The surface coefficient of heat transmission (f) is defined as the number of British thermal units which will flow between one square foot of the surface of the material and the surrounding air per hour per degree difference in temperature between the surface and the air. This definition is direct, but before the coefficients can be determined experimentally there are some of the factors which must be more definitely defined. First, the surface temperature, which is a rather definite quantity, is difficult to determine experimentally, due to the effects of other temperatures.

Prof. Frank B. Rowley

After some experimental work, the method selected for taking surface temperatures was to place the thermocouples on the surface of the material and cover them with a thin vellum paper. The second question which arises in determining the surface coefficients is that of where to take the air temperatures. It was found that from 0.5 in. out these temperatures were substantially constant. A third point which must be considered is that of air velocities. In order to standardize on some practical condition, the velocities were produced parallel to the test surface and measured in this line.

It was concluded from the tests that for air velocities ranging from 0 to 35 miles per hour, the coefficients have followed a straight line relation. This line has been steeper for cases in which the couple has been attached to the surface than when it has been embedded. This difference has been due to the

fact that the recorded surface temperatures were more nearly equal to the air temperatures when the couples were placed on the surface; therefore, the apparent surface coefficient was higher.

With the construction of a new meter, this work is to be continued, and further reports will be made through the Journal of the American Society of Heating and Ventilating Engineers.

Suggested Method of Testing Unit Heaters Suitable for Field Use

A paper was presented by L. S. O'Bannon suggesting a method of testing unit heaters which method may be used in the field. It was stated that the purpose of the author was to describe a method by which the air volume output may be obtained accurately with a minmum amount of auxiliary equipment. The method has been named the condensate-nozzle method and the underlying principles are the same as those upon which the condensate-temperature rise method is based. The heat output of the unit is found in the usual manner by measuring the steam condensing capacity of the heater. Air volume outputs are computed indirectly from the temperature rise and the heat given up by the steam. The distinctive feature of the condensate-nozzle method is the graphical means employed to arrive at certain unobserved final temperatures.

It was also stated that several investigators have shown that the air volume at the fan of a unit heater remains constant for a given speed regardless of changes in inlet air temperature and steam temperature. Based on this law, formulas were derived by which the final air temperature and heat output may be converted from one set of conditions to another.

Preventing Condensation on Interior Building Surfaces

In presenting his paper on the subject of preventing condensation on interior building surfaces, Paul D. Close pointed out the seriousness of the many problems arising from the formation of condensation. This subject is of special interest to the plumbing and heating contractor in that the findings may be extended to apply to the prevention of condensation on pipe surfaces, etc. Also, heating requirements may be specified in relation to condensation.

It was stated that condensation is, of course, caused by contact of the warm humid air in a building with surfaces below the dew-point temperature. To prevent condensation it is necessary to do one of two things (1) to increase the temperature of the surfaces upon which the precipitation of moisture takes place above the dew-point for the dry bulb temperature and relative humidity involved, or (2) to reduce the humidity of the air so that the dew-point is below the temperature of the surfaces with which it comes in contact. The fundamental upon which the solution of condensation problems is based is that the drop in temperature through any construction is proportional to the heat resistance.

The derivation of a formula for solving condensation problems was given in the report and a chart was developed for ascertaining the thickness of insulation required to prevent relative humidity, the inside and outside temperatures, the transmission coefficient of the wall or roof, and the conductivity of the insulation being considered as variables.

It further was indicated that from the theoretical standpoint, the most effective results are obtained by applying the insulation to the interior surface of the wall or roof, or as near in the wall or roof to the interior surface as possible, especially if the building is allowed to cool at night and is heated quickly in the morning. In correcting condensation difficulties it is important to keep in mind that the deposition of moisture on the interior surfaces of buildings due to other causes is frequently attributed to condensation. Water deposits caused by the porosity of masonry walls and leaky roofs are often mistaken for condensation deposits.

Conclusions as a result of the investigation are summarized as follows:

Condensation on the interior surfaces of buildings is often a serious problem, and one which the heating engineer is frequently called upon to solve. It is caused by the contact of the warm humid air in a building with surfaces below the dew-point temperature, and can be remedied by increasing the temperature of such surfaces above the dew-point temperature or by lowering the humidity.

Dehumidification is not permissible in many cases on account of the fact that a high moisture condition is necessary for manufacturing processes. Hence, the only alternative is to increase the surface temperature, which can be accomplished by decreasing the surface or filament resistance by increasing the velocity of air passing over the surface, or by increasing the overall resistance by adding a sufficient thickness of insulation.

The latter method is generally resorted to, and the thickness of insulation is determined by ascertaining the amount of resistance to be added to increase the temperature of the interior surface above the dew-point temperature for the maximum conditions involved, which in turn is based on the fundamental principle that the drop in temperature is proportional to the resistance.

In order to function satisfactorily the surface of the insulation must be adequately protected from the moisture laden air by means of a suitable vapor-proofing course, preferably one consisting of alternate layers of saturated roofing felt and bitumen. It is usually advisable to install the insulation as far from the exterior surface of the wall as possible.

Condensation on windows is most readily prevented by using multiple panes of glass with air spaces between, but the heat resistance provided by each air space is relatively small compared with most insulations, so that usually several air spaces are required to entirely prevent condensation under severe conditions. Condensation on vertical surfaces such as walls and windows, especially the latter, is often disregarded, since the most annoying and troublesome problem is usually that of roof or ceiling condensation, to which more attention is paid.

This is especially troublesome on installations of inclined skylights.

Absorption of Solar Radiation in Its Relation to the Temperature, Color, Angle and Other Characteristics of the Absorbing Surface

As indicated by F. C. Houghten and Carl Gutberlet in their paper appearing under the above head, absorption of solar radiation by buildings is daily becoming of greater importance to the heating and air conditioning engineer. Increase in the application of cooling to buildings in summer is an important factor in this growth of interest. The application of more scientific methods and closer calculation to the estimation of the heating requirements of buildings is also, however, an important factor in the growing interest in this question. With more scientific air conditioning, the relative effect of heat from the sun on heating requirements and proper temperature distribution indoors becomes more noticeable to the observer.

In recent investigations by the Research Laboratory, made incidental to a general laboratory study of heat transmission through building construction a high temperature of 140 deg. Fahr. was reached by absorption of radiant heat from the sun. For a

F. C. Houghten

complete understanding of the subject of heat absorption by walls, data should be available giving the rate of absorption by a number of different surfaces for various temperatures of the surface and the air in contact with it.

In explaining what happens when the sun's rays impinge upon a roof or wall surface a single ray was considered. Of the total amount of radiant energy or heat in the single ray impinging against the surface a portion does not enter the surface at all but is reflected away from the structure and need not be considered further. The amount of such reflection depends upon the angle between the ray and the surface, the polish of the surface, and the material of which the surface is made. In general, metallic surfaces reflect a large portion of the energy rays while such materials as are usually used in building construction, including all but metallic paints, are assumed to reflect a comparatively small portion of the total radiant energy.

Conclusions as a result of the investigations are as follows:

1. The total energy emitted by the sun figured normal to the direction of radiation at sea level is given by Bigelow as about 332 B.t.u. per square foot per hour or 1.38 square feet of equivalent steam radiation on a clear day.

2. The heat absorption by a black oilcloth surface perpendicular to the sun's radiation was found to be as high as 273 B.t.u. per square foot per hour on a day which would be considered bright in Pittsburgh.

3. Lamp black painted surfaces, red brick dust painted surfaces and aluminum bronze painted surfaces perpendicular to the sun's radiation show 94.0, 63.4 and 28.2 per cent as high a rate of absorption as the black oilcloth.

4. The difference in retention of absorbed heat by surfaces having temperatures different from the air in contact with them apparently can be satisfactorily corrected for a black surface by assuming a surface transmission coefficient of 2.0 B.t.u. per square foot per hour per deg. temperature difference between the surface and air, when this temperature difference is not greater than 20 deg.

5. A single pane of double strength window glass placed so that the sun's rays must pass through it before it impinges on the surface reduces the heat absorption of that surface by from 8.9 to 16.5 per cent, when the impingement is normal. For smaller angles of impingement the glass retards a greater per cent of the radiant energy.

6. The rate of absorption of heat from the sun's radiation by a surface at any angle with the direction of radiation may be satisfactorily computed by the equation $Q = H \sin \theta$ where Q is rate of absorption for the angle θ and H is the rate of absorption for the same surface normal to the direction of radiation.

The Measurement of the Flow of Air Through Registers and Grilles

A paper was read reporting the result of research conducted at Armour Institute of Technology by Lynn E. Davies, the purpose of which was to arrive at a simple and accurate method of measuring the flow of air through grilles or registers. It was stated that it is necessary to use the anemometer in such field testing and the problem resolves itself into one of how to use this instrument and how properly to interpret its indications. Both supply and exhaust registers were tested. In the matter of testing supply registers the following procedure was decided upon: The surface of each grille was marked off into a number of equal rectangular areas, 16 divisions in the case of the 24 x 24 in. grilles, 12 in the case of the 16 x 24 in. grilles, and 4 in the case of the smallest grilles used During each run two readings were taken with the anemometer opposite the center of each small area. One of these readings in each case was taken with the anemometer held in contact with the surface of the grille, the other with the instrument held 3 in. away. In each case the average of the 16 readings obtained was corrected for instrument error and then multiplied by the gross area of

(Continued on Page 84)

This tabulation is the sixth in a program designed to give the plumbing industry a concise source of information on codes

Plumbing Code Tabulations

The Use of Cleanouts on the Plumbing System

By R. M. STARBUCK, JR.

Article No. 6

IN THE first article of this series, we gave you a general survey of our plan for presenting in DOMESTIC ENGINEERING the information contained in 400 of the plumbing codes of the leading municipalities of the United States and Canada. Included in this article was a list of these cities and towns.

In the four tabulations next following, we took up those subjects that pertain to the organization and maintenance of municipal regulation and protection of plumbers and plumbing.

In this present article we shall begin to consider actual plumbing practice, and for our first subject we have chosen "Use of Cleanouts on the Plumbing System."

We presume that it would have perhaps been a more natural course to have selected some broader subject than this as our introductory effort to spread before you the plumbing practices of the two great North American nations. However, a considerable interest has recently been aroused by a discussion of the wisdom of using so many cleanouts on the plumbing system, as modern practice generally calls for. The present prominence of this subject influenced us in selecting it for tabulation.

Nearly every question we can think of, whether it relates to religion, politics or plumbing, seems to be able to get together warm support both for and against. This seems to be true of the question of use of cleanouts on the plumbing system. There are those who feel that every foot of drainage piping should be accessible for the purpose of clearing out any stoppage that may possibly occur. Also, there are those who would reduce the use of cleanouts to a minimum. And as might be expected, adherents of both opinions are able to muster strong arguments in their defense. It would be a fine thing if our work in connection with these tabulations should prove helpful in coming to a clearer understanding of this important question.

In an article appearing on page 69 of the September 7 issue of DOMESTIC ENGINEERING, dealing with the merits of the plumbing code of Portland, Ore., we quoted William Hey, chief plumbing inspector of that city, as follows:—"We find that the Hoover code recommends (Sec. 63) cleanouts at the base of all soil and waste lines. We have found this to be an additional expense without any material benefit, but in reality a detriment, as we have found that cleanouts are opened by every Tom, Dick and Harry, and the covers either broken or lost, leaving an open sewer, for sewer air to enter the building."

The next act in this comedy or tragedy of the cleanout, is a letter from A. R. McGonegal, chief plumbing inspector of Washington, D. C., and president of the American Society of Sanitary Engineering. The letter is the following:—

"I was much interested in that portion of your article in the September issue, in which you quote William Hey on the superfluity of cleanouts in a plumbing system, and you say that his attitude provides 'food for thought' and that you 'want readers' comments.' Here goes:

"(1) The installation of a cleanout on a plumbing system is a tacit admission on the part of the plumber that he cannot install a system of plumbing which can be expected to work in a satisfactory manner.

"(2) The cleanout cover is an invitation to the handy man to install an added fixture, using a hose or straight pipe, simply shoving it into the opening and plugging it with rags, putty, etc., thus tending to create an unsanitary condition and doing a legitimate plumber out of installing the fixture properly with tight waste connection by proper fittings, and venting the trap.

"(3) In case of partial stoppage a handy man removes the cover, sticks the wire down and either throws the cover away or crosses the threads when putting it back, leaving an improperly cleared sewer and a direct opening to the building for entrance of sewer air, thus nullifying all trapping and venting elsewhere in the building.

"(4) When a plumbing system is sick enough to need clearing, it should be done properly by a mechanic, taking up the pipe and putting it back again properly, instead of merely opening a small hole through the obstruction and leaving it so that it will become obstructed again.

"(5) Cleanouts are expensive to install, and in about fifty per cent of the cases they are not where they can be of any use. I believe it is safe to say that not more than one in one hundred cleanouts is ever used. Thus a great burden of expense is placed on the owner for the questionable saving in isolated cases.

"(6) In Washington we have not permitted a cleanout for thirty years, and all of the above statements have been borne out in fact. There are also other large cities that look at the matter in the same light.

"With the above and one other exception, our regulations comply fully with the Hoover Code. We however look on this matter of cleanouts as covered

City	Use of Cleanouts on Horizontal Drainage Lines	Use of Clean-outs at Stack Intersections	Maximum Distance Between Cleanouts on Horizontal Lines	Size of Cleanouts on Drainage Lines	General Requirements in Use of Cleanouts
Alabama					
Birmingham	At 90-degree intersections; at change of horizontal direction; at lower end of line	At foot of each stack		4 in. for 4 in. pipe and larger; smaller pipes same size as pipe	A C. O. within 6 ins. of wall, must be extended through same.
Gadsden					No mention of cleanouts in code.
Huntsville				Same size as pipe	No mention of cleanouts in code.
Mobile	At offsets and changes of direction in refrigerator lines	At foot of each stack not concealed	On inaccessible drains, 40 ft.		A floor or wall fixture connection, bolted or screwed, considered a C. O. A C. O. shall have 12 in. clearance for rodding.
Arizona					
Flagstaff	On all branch wastes for sinks and slop hoppers	At foot of each stack		Same size as pipe	
Phoenix					
Arkansas					
Fort Smith		At foot of each 4-in. stack			
Hope	At each change in direction	At foot of each stack		4 ins. for 4-in. pipe and larger; smaller pipes same size as pipe	A C. O. within 3 ft. of wall or below floor shall be extended through same.
Hot Springs					No mention of cleanouts in code.
Little Rock	Wherever necessary in order to clean all lines		50 ft.	4 ins. for 4-in. pipe and larger; smaller pipes same size as pipe	A C. O. within 1 ft. of wall, or below floor, shall be extended through same.
California					
Alameda					No mention of cleanouts in code.
Alhambra	At end of each line 5 ft. or over, wherever change of alignment exceeds ⅛ in. 5 ft.	At foot of each stack	100 ft. on house sewer, with extra C. O. if over 2⅛ bends between building and property line	4 ins. for 4-in. pipe and larger; smaller pipes same size as pipe	A C. O. required on each house sewer, at parking space between curb and sidewalk on outlet of sand trap. If within 18 ins. of wall, must be extended through same
Anaheim	At any angle when required by inspector	At foot of each stack		Same size as pipe	
Bakersfield	At all changes in direction		100 ft. on house sewers; 30 ft. on other lines.		A C. O. within 1 ft. of wall or below floor shall be extended through same.
Berkeley	At end of each line of sewer or waste and each lateral 5 ft. or over			Same size as pipe	
Eureka	At end of house drain			Same size as pipe	A C. O. on main trap.
Fresno	At end of house drain		40 ft. on house drains.	Same size as pipe	A C. O. within 1 ft. of wall or below floor shall be extended through same.
Fullerton	At any angle where required by inspector	At foot of each stack		Same size as pipe	
Glendale	At end of each line. Where 2 lines intersect	At foot of each stack		4 ins. for 4-in. pipe and larger; smaller pipes same size as pipe	A C. O. shall have clearance of 18 ins. from any pier, wall, girder, etc.
Long Beach	At each change in direction, except concealed work above first floor	At foot of each stack	100 ft.		A C. O. within 1 ft. of wall or below floor shall be extended through same.
Los Angeles	At end of each line, not concealed. Where 2 lines intersect	At foot of each stack		4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	A C. O. shall have clearance of 18 ins. from any pier, wall, girder, etc. 2 C. O.'s on main trap.
Merced	At end of each line of sewer and each lateral 5 ft. or over			Same size as pipe	C. O. required on sewer side of deck trap.
Monrovia					A C. O. within 18 ins. of wall, must be extended through same.
National City	At end of each line. At each change in direction	At foot of each stack			A C. O. within 1 ft. of wall must be extended through same.
Oakland	At all changes of 5 ft. on house drain			Same size as pipe up to 4 ins., inclusive	A C. O. is required wherever rain leader connects with drainage system, also at ends of each battery of fixtures, 12 ins. clearance required.
Orange	At all changes in direction	At foot of each stack		Same size as pipe	C. O.'s shall be extended to outside of wall.
Palo Alto	At end of each line of sewer, and each lateral 5 ft. or over			Same size as pipe	
Pasadena	At end of each line 5 ft. or over, on all sink lines	At foot of each stack if 5 ft. from drain.	100 ft. house sewers, soil or waste lines	4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	A C. O. within 18 ins. of wall, must be extended through same. Cleanouts on cement floors shall extend ½ in. above same.
Redwood City	At end of each line			4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	
Riverside	At all changes in direction. At end of each line not concealed	At foot of each stack		4 ins. for 4-in. pipe and larger; smaller pipes same size as pipe	A C. O. shall have clearance of 18 ins. from any pier, wall, girder, etc. All cleanouts under cement floors shall be brought flush with floor.
Sacramento	At end of each line 10 ft. or over, receiving discharge of a sink			Same size as pipe	C. O. required on sewer size of deck trap.
San Bernardino	At end of each line. At each change in direction	At foot of each stack		4 ins. for 4-in. pipe and larger; smaller pipe same size as pipe	A C. O. under cement floor must be brought flush. A C. O. witnin 1 ft. of wall must be extended through same.
San Diego	At end of each line. At each change in direction	At foot of each stack	50 ft. on lines of 75 ft. or over	Same size as pipe	A C. O. within 1 ft. of wall or below floor, shall be extended through same.
San Francisco	At end of each line of sewer, and each lateral 5 ft. or over			Same size as pipe	C. O. required on sewer side of deck trap.
San Jose	At end of each line 5 ft. or more	At foot of each stack	50 ft.	4 ins. for 4-in. pipe and larger; smaller pipe same size as pipe.	Cleanouts may be omitted over ceilings.
San Mateo	At end of every line of sewer, and each lateral 5 ft. or over			Same size as pipe	

City	Use of Cleanouts on Horizontal Drainage Lines	Use of Cleanouts at Stack Intersections	Maximum Distance Between Cleanouts on Horizontal Lines	Size of Cleanouts on Drainage Lines	General Requirements in Use of Cleanouts
Santa Ana	At end of each line, at each change in direction over 4 ft. long	At foot of each stack	50 ft.	4 ins. for 4-in. pipe and larger; smaller pipe same size as pipe.	A C. O. required on house sewer of building built up to property line. C. O. required on sand trap outlet. A C. O. within 24 ins. of wall must be extended through same.
Santa Barbara	At end of all sink lines and all branches except above first floor	At foot of each stack	100 ft. on soil lines; 40 ft. on sink lines		Combination Y and bend fittings with C. O. prohibited. C. O. shall have clearance of 12 ins. from wall.
Santa Monica	At each change in direction	At foot of each stack		Same size as pipe	All cleanouts shall extend through walls.
Santa Rosa	At each change in direction	At foot of each stack receiving sink waste			
Stockton	At end of each line 5 ft. or over	At foot of each stack		4 ins. for 4-in. pipe and larger; smaller pipe same size as pipe.	A C. O. within 1 ft. of wall, or below floor, shall be extended through same.
Ventura	At each change in direction	At foot of each stack		Same size as pipe	A C. O. within 18 ins. of wall, must be extended through same.
Watsonville	At end of each line			4 ins. for 4-in. pipe and larger; smaller pipe same size as pipe.	
Colorado					
Canon City	At each change in direction	At foot of each stack		Not less than 4 ins., except 2 ins. on sink lines	A C. O. required in every soil pipe Y.
Colorado Springs					On all-lead trap vents, a C. O. shall be soldered in not over 6 ins. above trap.
Fort Collins					C. O. connections where practicable, and not to be smaller than 2 ins.
Trinidad		At foot of each stack			Sink waste pipes to have C. O.
Connecticut					
Bridgeport	Where house drain leaves building. At each change in direction				
Derby					1 C. O. specified for main trap.
Hartford	Where house drain leaves building. At each change in direction	At foot of each inside conductor	30 ft. on main runs	4 ins. for 4-in. pipe and larger; smaller pipe same size as pipe.	2 C. O.'s for main trap. C. O. for cellar drain trap. C. O. required on outlet from catch basins.
Meriden	At end of each line				2 C. O.'s for main trap.
New Britain	At end of each line. Between main trap and cellar wall		30 ft.		2 C. O.'s for main trap. C. O. for cellar drain trap.
New Haven	At end of house drain. Back of sink connection on house drain			Same size as pipe, with 6 in. maximum	C. O. required on leader trap. 2 C. O.'s on main trap. C. O. on cellar offsets on refrigerator waste over 7 ft. long.
New London					2 C. O.'s for main trap.
Norwalk				Same size as pipe, with 6 in. maximum	1 C. O. for main trap. C. O. on cellar offsets in refrigerator lines.
Stamford					Cleanout requirements not definite.
Torrington	Where house drain leaves building. At every 90 degree turn of drain		30 ft.		2 C. O.'s for main trap.
Waterbury					No mention of cleanouts in code.
Delaware					
Wilmington					No mention of cleanouts in code.
Dist. of Columbia					
Washington					No mention of cleanouts in code.
Florida					
Bartow			25 ft.		Cleanouts shall be brought above floor level.
Daytona	At each change in direction		25 ft.		Cleanouts shall be brought above floor level.
Jacksonville			25 ft.		Cleanouts shall be brought above floor level.
Miami	At each change in direction of sink and urinal wastes	At foot of each stack	75 ft.	Use of larger sizes than 6 ins. optional	A floor or wall fixture connection, bolted or screwed, considered a C. O.
Miami Beach	At each change in direction	At foot of each stack			A C. O. within 1 ft. of wall, or below floor, shall be extended through same.
Okeechobee	At each change in direction	At foot of 2 in. and 4 in. stacks	30 ft., 25 ft. for 2-in. pipe		
Palm Beach		At foot of each stack			Use on iron sewers mentioned, but not specifically.
Pensacola	All soil, sewer and waste lines shall have Y with C. O. at upper end of line				All branches, 45 degrees and 90 degrees intersections to to be made with Y or with Y, ⅛ bend and C. O.
St. Petersburg	At each change in direction of sink and urinal wastes		40 ft.		A floor or wall fixture connection, bolted or screwed considered a C. O.
Tampa	At each change in direction of sink and urinal waste	At foot of each stack	50 ft.		A floor or wall fixture connection, bolted or screwed, considered a C. O.
Georgia					
Albany	House drain to have 2 C. O.'s just inside wall, with Y, and at foot of main stack	At foot of each stack	50 ft.	4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	A floor or wall fixture connection, bolted or screwed, considered a C. O.
Atlanta	At each change in direction. Just inside wall, and at foot of main stack	At foot of each stack	100 times diameter of pipe	4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	A floor or wall fixture connection, bolted or screwed, considered a C. O.
Augusta		At foot of each stack			
Columbus	At each change in direction				Inspector may order Y cleanouts in sewer lines if advisable.

City	Use of Cleanouts on Horizontal Drainage Lines	Use of Cleanouts at Stack Intersections	Maximum Distance Between Cleanouts on Horizontal Lines	Size of Cleanouts on Drainage Lines	General Requirements in Use of Cleanouts
Valdosta					No mention of cleanouts in code.
Idaho					
Boise City	A C. O. not less than 2 ins. in each drain where it leaves basement				Sinks to have 1½ in. brass C. O. plug in 2 x 1½ tapped tee each 25 ft. on short runs, a tapped tee with brass plug.
Caldwell	At each change in direction	At foot of each stack	15 ft.	Same size as pipe	A C. O. required in waste of each sink, bathtub and slop sink.
Illinois					
Bloomington	At each change in direction. At end of each line. Just inside wall. If necessary at each junction	At foot of each stack	25 ft., 15 ft. on sink lines	Same size as pipe	C. O. required on end of any line having more than 1 fixture attached to it on same floor.
Canton	Main drains to have brass plug cleanouts				
Champaign	At each alternate change in direction. Near connection of house drain and sewer	At foot of each stack	40 ft.	4 ins. for 4-in. pipe and larger; smaller pipes same size as pipe	Cleanouts on run of soil pipe may be made with tees.
Danville	Where base of soil stack passes through wall, change in direction shall have C. O. in Y				
East St. Louis					No mention of cleanouts in code.
Elgin	"Hand-hole fixtures" required at intersections and other points for cleaning				1 C. O. for main trap.
Elmhurst	At each 90 degree intersection	At foot of each stack		4 ins. for 4-in. pipes and larger	
Forest Park	At end of each line. At each change in direction	At foot of each stack		4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	
Harvey					No mention of cleanouts in code.
Jacksonville	Where house drain leaves building. At each change in direction	At foot of each stack			
Joliet	At each change in direction. At end of each line	At foot of each stack		Same size as pipe	When necessary to open a drain, a C. O. shall be put in for future use.
Kewanee	Where house drain leaves building. In each waste running over 5 ft. from main stack	At foot of each stack	25 ft., 20 ft. on underground sink waste		C. O. required at foot of inside rain leader.
Libertyville	Where house drain leaves building. At end of each line			Same size as pipe	At offsets on refrigerator wastes in cellar.
Moline	At each change in direction. On each waste running over 4 ft. from main stack. Where house drain leaves building. At each change in direction	At foot of each stack	25 ft., 20 ft. on under ground sink wastes		C. O. required at foot of inside rain leaders.
Peoria	At end of each line	At foot of each stack		4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	
Springfield	At end of each line	At foot of each stack	25 ft.	Same size as pipe	
West Frankfort		At foot of each stack			
Indiana					
Evansville	At end of all lines of 5 ft. or over	At foot of each stack		4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	When necessary to open a drain, a C. O. shall be put in for future use.
Fort Wayne	At end of each line. Where house drain leaves building. At end of house drain	At foot of each stack	50 ft.	4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	Cleanouts on horizontals may be made with tees.
Indianapolis	Where house drain leaves building. At or near main stack	At foot of each stack	20 ft. up to 3 ins.; 50 ft. for 3 ins. and larger	4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	A floor or wall fixture connection, bolted or screwed, considered a C. O. 2 C. O.'s for main trap.
South Bend	At end of each line	At foot of each stack	50 ft.	4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	
Iowa					
Burlington	Where house drain leaves building. On each line where most accessible. At each change in direction		50 ft.	4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	C. O.'s with bolted covers allowed.
Cedar Falls	2 C. O.'s on house drain over 5 ft. from wall to stack, one at wall and 1 at stack. Branches to fixtures shall have C. O	At foot of each stack		4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	C. O.'s at wall shall extend above floor level.
Cedar Rapids	Branches to fixtures shall have C. O. 2 C. O.'s on house drain, 1 at wall, 1 at stack	At foot of each stack	50 ft.	4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	
Council Bluffs	At end of each line. Where house drain leaves building	At foot of each stack		4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	1 C. O. for main trap.
Davenport	Where house drain leaves building. At each change in direction	At foot of each stack			
Des Moines	Branches to fixtures shall have C. O. 2 C. O.'s on house drain, 1 at wall, 1 at stack. At each change in direction	At foot of each stack	50 ft.	4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	
Fort Dodge	Where house drain leaves building	At foot of each stack		4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	
Keokuk	Where house drain leaves building	At foot of each stack		4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	C. O. required in all soil and waste openings for future use.

City	Use of Cleanouts on Horizontal Drainage Lines	Use of Cleanouts at Stack Intersections	Maximum Distance Between Cleanouts on Horizontal Lines	Size of Cleanouts on Drainage Lines	General Requirements in Use of Cleanouts
Mason City	At end of each line. Where house drain leaves building	At foot of each stack		4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	
Waterloo	At end of each line. At each change in direction. Where house drain leaves building			4 ins. for 4-in. pipe and larger; smaller pipes same size as pipe	When necessary to open a drain, a C. O. shall be put in for future use.
Kansas					
Arkansas City					No mention of cleanouts in code.
Coffeyville	All horizontal pipes shall have cleanouts				C. O. required in all wall and continuous wastes, immediately under trap openings. 2 C. O.'s for main trap.
Kansas City	At each change in direction. At end of each line if over 10 ft.	At foot of each stack		Same size as pipe	C. O. required on end of any line having more than 1 fixture attached to it on same floor.
Manhattan					No mention of cleanouts in code.
Newton	At end of each run of soil pipe 5 ft. or more from main stack. At end of all branches under concrete floor	At foot of each stack		4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	C. O. required on every sink waste.
Parsons					1 C. O. for main trap.
Pittsburgh	At end of each line. Where house drain leaves building. At end of house drain	At foot of each stack	50 ft.	4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	Cleanouts on horizontals may be made with tees.
Salina	Where house drain leaves building. At end of each line. At each change in direction over 5 ft.	At foot of each stack	25 ft.	4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	Cleanouts on horizontals may be made with tees.
Wichita		At foot of each stack		4 ins. for 4-in pipes and larger; smaller pipes same size as pipe	A C. O. within 6 ins. of wall, or below floor, shall be extended through same.
Kentucky					
Fort Thomas					No mention of cleanouts in code.
Louisville					No mention of cleanouts in code.
Paducah					No mention of cleanouts in code.
Louisiana					
New Orleans	At each change in direction of ⅛ or more. Just inside property line	At foot of each stack	50 ft.		
Shreveport	At each 90 degree intersection. At end of each line. At each change in direction	At foot of each stack		4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	A C. O. within 6 ins. of wall, or below floor, shall be extended through same.
Maine					
Biddeford	Where house drain leaves building. At or near base of stack	At foot of each stack	50 ft.	4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	
Lewiston	At each change in direction		25 ft.		1 C. O. for main trap.
Portland	A C. O. required on house drain				1 C. O. for main trap. A C. O. on house side of leader traps.
Maryland					
Baltimore	Where house drain leaves building	At foot of each stack		4 ins. for 4-in. pipes and larger; smaller pipes same size as pipe	
Cumberland		At foot of each stack			1 C. O. for main trap.
Hagerstown			75 ft.		No C. O. shall be installed in a sump or be arranged to permit entrance of surface water into sanitary system.

in the Hoover Code, as one of the things which one may permissibly vary from."

Both these testimonies are against the promiscuous use of cleanouts and coming as they do from two of the country's leading experts, it behooves us to sit up and pay attention.

On the other hand, the tabulations which we show in connection with this article, show many cities which demand the use of cleanouts to such an extent that if their requirements are actually carried out, there would not be a foot of the drainage system that could not be easily reached from one or more cleanouts.

One Extreme in Cleanout Requirements

Take the city of Bloomington, Ill., for instance. This city requires a cleanout at each change in direction of all horizontal lines, at the end of each of these lines, at the point where the house drain leaves the building, at each intersection if found necessary, at the foot of each stack, at the end of each horizontal line having more than one fixture attached to it on the same floor, every 15 ft. on horizontal sink lines and every 25 ft. on other horizontal lines.

Certainly Bloomington, Ill. and Washington, D. C. are at the two extremes of the cleanout question. And which of these is correct, or is neither just correct?

As Mr. McGonegal points out in his letter, "cleanouts are expensive to install." If he had expanded this statement, we presume he might have gone on to say that because they are an expense to the owner, therefore they should not be installed unless they are actually going to do the owner and his plumbing system some real good.

The tendency today in plumbing practice, is to get rid of those things that are superfluous, and all we can say is that if some of the cleanouts we are now

Willie: We'd better stick to the Hays Double Seal Connection where we can't go wrong.

Albert: Check and double check.

installing are actually superfluous, then it is time to get rid of them. However, before supporting drastic measures in this direction, we would want to hear the other side of the story.

Cleanouts Condemned

Mr. Hey condemns the use of a cleanout at the foot of each soil and waste stack. Our tabulations show that out of 400 codes covered by them exactly 200 demand a cleanout at the foot of each stack, and no doubt a large part of the others follow the same practice. In the face of such extensive use of these cleanouts there must be very strong testimony in their favor, if we could only bring it out. It would be most helpful if others besides Messrs. Hey and McGonegal were to take up cudgels in defense of their opinions concerning these things.

The writer himself can bear testimony to the wrong conditions resulting from the careless use of cleanouts. He knows personally for instance, of the following incident. Something like a dozen years ago, during a spring thaw, water got into the cellar of a house of an acquaintance. There was a cleanout coming out of the cellar bottom at the foot of the main stack. Not being able to start the cleanout, the man in question broke out the cover, and immediately the water began to run off and eventually the cellar was entirely emptied of water through that cleanout. The rest of the story is that the cleanout never went back. So far as the writer knows, that cleanout opening has been wide open for twelve years. And the owner is a high-type man, one who would ordinarily go the limit in protecting his family against any wrong condition.

Now the question arises as to whether, on the basis of such an incident as this, (and there are quantities of similar ones), we should prohibit the use of cleanouts at the base of stacks, or should endeavor by some means to still continue to have the benefit of the cleanout, but under conditions which would overcome their use as cellar drains.

Such cleanouts of course are not intended at all for any other purpose than the cleaning of the pipes in the event of stoppage.

If you will study these tabulations you will see how many of the plumbing departments of various cities have endeavored to overcome this and other difficulties arising from the wrong use of cleanouts.

Cleanouts Brought Above Cellar Floor

A number of codes call for cleanouts to be brought above the cellar floor, but do not specify how far.

The Wisconsin cities name 2 inches as the distance, while two cities in the state of Washington, call for cleanouts to be brought 3 inches above the cellar bottom. This slight change would prevent cleanouts from being used in the way we have described above, as cellar drains.

Several of the New Jersey cities call for cleanouts to be located 6 inches, 12 inches, or 18 inches above the cellar bottom. We presume this refers to their use at the foot of stacks, for it would hardly seem probable or necessary that they would be carried so high where they were located on horizontal runs.

In justice to the other side of this question, we think that instances of neglect to replace cleanout covers for the most part concern cleanouts whose location is such that sewage does not run out or splash out by reason of the absence of the cleanout cover. Therefore this particular cleanout difficulty would be much more in evidence in the cellar or basement than elsewhere.

Now referring more definitely to our tabulations,—we are dividing them into three parts. In this article our tabulation covers in alphabetical order, cities in the states beginning with Alabama and ending with Maryland. In other articles the balance of the list of states will be covered.

Of course it will be clearly understood that such a tabulation can cover only the framework of such a subject, and can touch little of the detail.

It goes without saying that the various codes have conventional requirements that each cleanout shall be located accessibly, that each trap shall have a cleanout, etc. We have not cluttered up our tabulation with common data of this kind. In fact we have not included anything concerning cleanouts as used on fixture traps, confining the work to pipe cleanouts.

As we have stated in connection with other tabulations, it is probably impossible to go through 400 plumbing codes in search of information on cleanouts, and manage to spot each mention that is made. Therefore there will doubtless be more or less unintentional omission of information, and very likely other inaccuracies. We know that they will be overlooked and excused.

Practically All Cities Having Codes Cover Cleanout Situation

We ought to call attention also to the fact that without any doubt, many and probably most of the cities which show no regulations or scanty regulations concerning the use of cleanouts, most likely demand their use to some extent at least, in actual practice. This very fact, however, we offer as evidence that no plumbing code should be lacking in such an essential feature as proper laws concerning the use of cleanouts.

Indeed, one of the dreams we indulge in, in undertaking such a laborious task as the tabulating of 400 plumbing codes, is that the information they provide, the discussions that we offer, and the comparisons that become evident, will all be influences tending not only to greatly improve plumbing practice in its various details, but also to point out and partially establish certain desirable practices. In this way perhaps, this work will help things along toward a country-wide plumbing code.

While other headings might easily have been chosen for our tabulation, the five that you see seemed natural and desirable. Into the last column we have thrown whatever data seemed not to fit into the other classifications.

You will note in the column which covers the size of cleanouts, that there are practically only two ways in which plumbing codes cover the subject. While some call for cleanouts to be the same size as the

(Continued on Page 171)

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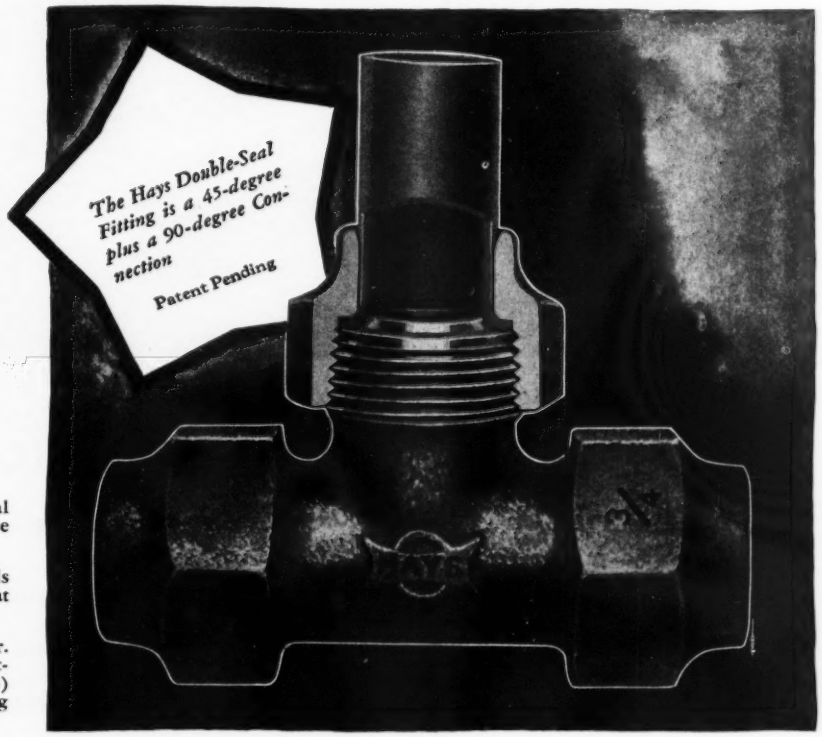

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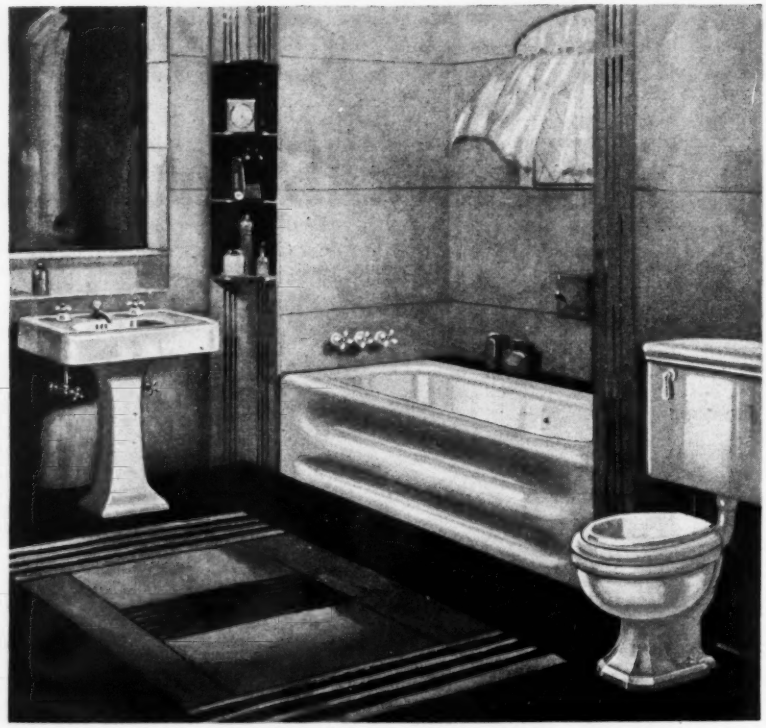

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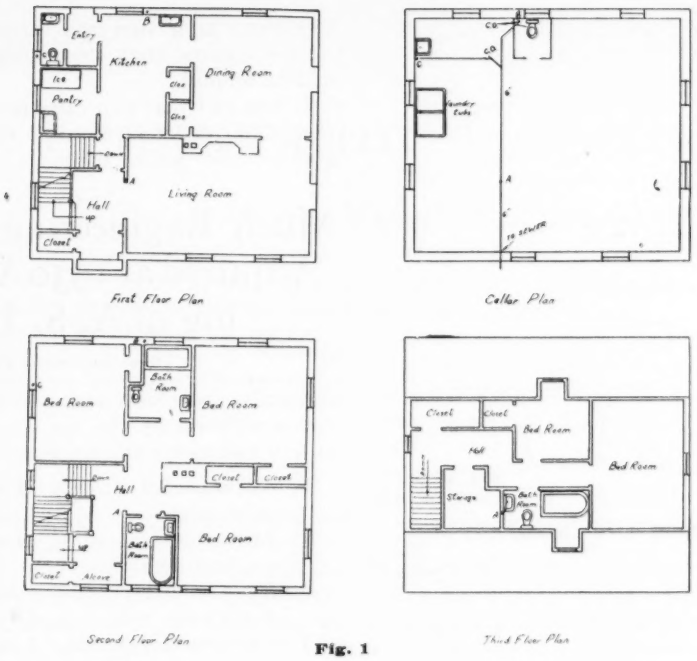

Fig. 1

An Intelligent Use of Isometric Elevations *in a Remodeling Problem*

By R. M. STARBUCK, JR.

AS THE value of isometric elevations in the plumbing and heating trades is seen, we find many of our readers desirous of instruction in the principles of isometric drawing.

After the fundamentals are learned, we know no better plan for developing skill in making these drawings than to study a well executed set of elevations. We are giving you, in Fig. 1, a set of floor plans and in Figs. 2, 3 and 4, detailed isometric elevations showing the plumbing called for on these plans.

We have selected this particular set of drawings for more than one reason.

In the first place, they are very nicely and neatly drawn. That counts for a great deal. In the second place, the three isometric elevations are intelligently drawn, and just enough of the detail of the several floors is used to clarify the connections. In the third place, the work has been done by a student in a trade school, and we like to have our readers know what is being accomplished in the trade schools of the country.

The drawings are the work of William R. Ainley, who is a student at the State Trade School, Bridgeport, Conn.

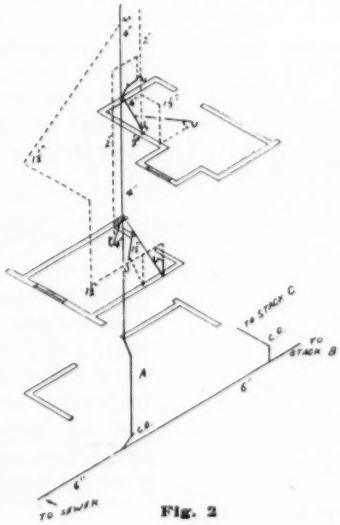

Fig. 2

If you will refer to the plans in the January 26 issue, you will find that a toilet room was to be provided for the first floor, a second bathroom for the second floor, and the water closet on the third floor was to be changed to a complete bathroom.

On the first floor, the refrigerator was moved into the pantry and its place put to use for the toilet room. Three closets were turned into a bathroom in the front part of the second floor. On the third floor, the bathroom was provided for by using a part of the storage room.

All of these ideas for remodeling the plumbing are well thought out. Our only criticism concerns the

third floor bathroom. While it is perfectly feasible to employ this method, it is a very expensive one. It involves the building of a dormer window, and this would of course be an expensive proposition. We are not saying however, that to obtain the comfort the bathroom would give, the family would not be willing to assume the expense.

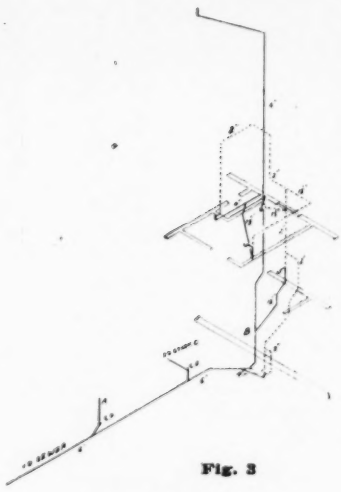

Fig. 3

Good Example for Study

Now let us look at the isometric elevations of the remodeled plumbing.

We think it was a wise thing to show the plumbing in three separate elevations of the three stacks, rather than to attempt to show the entire plumbing system in a single elevation. The use of good judgment in deciding whether to make one elevation of the whole, or separate elevations of parts of the system, is vital in isometric drawing as applied to plumbing and heating systems.

Often also, the angle on which the drawing is made has much to do with producing a drawing that shows the work clearly.

In all three elevations, the work has been viewed from the right hand corner of the plans.

Our suggestion is that those who are beginning the study, or who desire more knowledge of the subject, work these plans out line for line, studying the reason for all the lines that appear in the drawings.

We note one feature that could be improved. The vents for the bath traps are shown flat, and appear to be taken from the side rather than from the top of the waste. This should be corrected.

We also note that in some cases vents are supplied to top floor fixtures that might well be stack-vented.

Possibly less vertical piping might have been used in the venting to advantage.

Without discussing minutely either the excellence of the plumbing layout or the drawing itself, we are offering these plans and elevations as a study to those who are interested. And we know that close study of these drawings will be helpful.

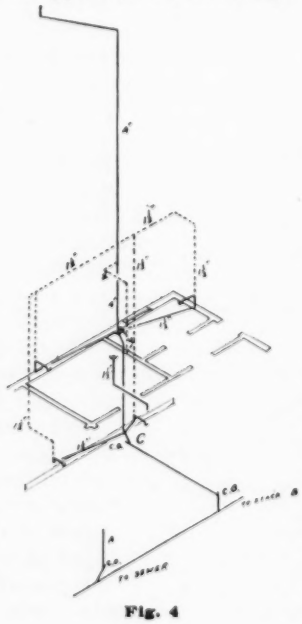

Fig. 4

If you find that you can make a better layout and would like to send us your drawings, we shall be glad to make use of them.

Much Engineering Information Acquired at 1930 Annual Meeting of A. S. H. V. E.

(Continued from Page 73)

the grille. Similarly each corrected average velocity was multiplied by the net free area. This resulted in five values for the air flow for each run, namely:

1. Anemometer reading in contact multiplied by gross area.
2. Anemometer reading in contact multiplied by net free area.
3. Anemometer reading 3 in. away multiplied by gross area.
4. Anemometer reading 3 in. away multiplied by net free area.
5. Quantity as measured by Pitot tubes.

By comparing the results obtained by the first four calculations, with the result of the Pitot tube traverse, it is possible to determine which method, if any, is the correct one for calculating the volume of air from the indicated velocities shown by the anemometer.

In the case of the exhaust register, the procedure was essentially the same as for the supply register except that all of the anemometer traverses were made in contact with the grille.

Rating of Heating Boilers by Their Physical Characteristics

The rating of heating boilers by their physical characteristics was discussed in a paper by C. E. Bronson in explanation of the code for the rating of low pressure heating boilers adopted by the members of the Steel Heating Boiler Institute. The text of the code appeared in the January 11 issue of DOMESTIC ENGINEERING. This method of rating boilers, according to Mr. Bronson, is offered as an alternate to the method of determining ratings by means of test characteristics.

(To be Continued)

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Time Required to Unload Pipe

A study was made in Fort Worth, Tex., of the time required to unload cast iron pipe. It was found that ten men working two hours could unload and stack 150 lengths of six-inch pipe; twelve men working two hours could unload and stack 120 lengths of eight-inch pipe; twelve men working two and one-half hours could unload and stack ninety-eight lengths of ten-inch pipe; twelve men working four hours could unload and stack sixty-five lengths of twelve-inch pipe.

—*Water Works Engineering.*

Discussion of

Temperature Control

Continued from Meeting of Illinois Chapter A. S. H. V. E.

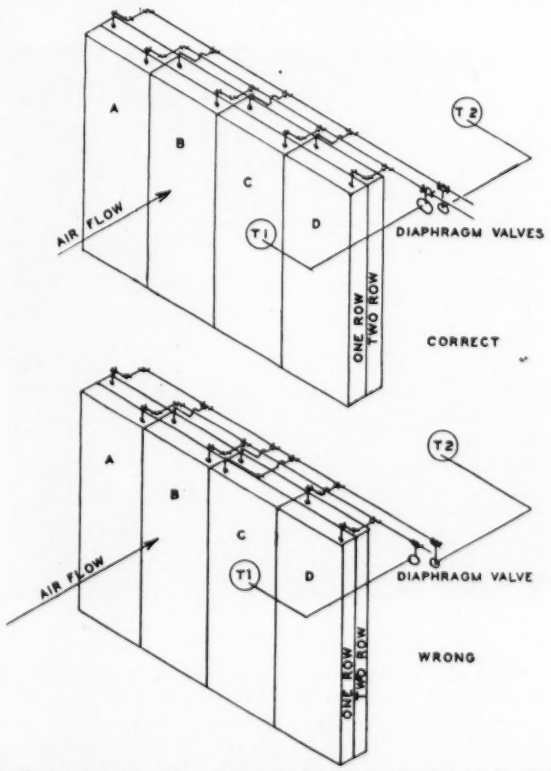
THE Illinois Chapter of the American Society of Heating and Ventilating Engineers December meeting was devoted to a discussion of temperature control which was reported in DOMESTIC ENGINEERING *under date of December 28. Since then additional interesting engineering information supplementing the discussion has been sent to us and we are presenting it herewith.*
—The Editor.

Fan Motor Control for Unit Heaters

IN MY mind, the most important thing brought out at the December meeting of the Illinois Chapter of the American Society of Heating & Ventilating Engineers was the control of the fan motor on unit heaters.

By keeping the fan inactive until the water and air have been removed from the heater, cold drafts are avoided and frozen coils prevented. Operators of such units fail to recognize the necessity for sufficient steam to fill the unit and by making it impossible to operate the fan, when such conditions exist, the human factor, which is too often the cause of trouble, is eliminated.

An outstanding example of improper piping and incorrect application of temperature control came to my attention recently.



In these sketches, the arrangement shown in the upper diagram is correct. A study of the piping connections in the lower diagram will show why section C in the tempering group of heaters was ruptured due to an insufficient amount of steam

Four tempering units, supplied with steam through one diaphragm valve which was to be controlled by a thermostat in the inlet chamber, were properly shown on the engineer's layout, but owing to the location of one section beneath a girder, the steam fitter connected the steam line to that particular unit from the line supplying the reheaters.

The reheaters were controlled by a thermostat in the warm air chamber and there were times, of course, when a limited quantity of steam was required in that group. The result was that but three tempering units were filled with steam while the fourth (c) was only partially filled, the result being inevitable.

Here was a case where the contractor depended upon his fitter to install the work according to the engineer's design, and really thought he had done so, but had to pay the cost of repairing a broken unit and put the piping in properly just because the fitter did not follow instructions.

Had the engineer's layout been incomplete, without sufficient detail, the fitter's skill and knowledge would have to be depended upon, but in this case the fitter followed a common practice of using his own judgment, which did not take into consideration the fundamental principles involved.

Very truly yours,

John F. Hale.

Temperature Control Apparatus in a Zone Control System of Vacuum Heating

THE vacuum system of steam heating has enjoyed for many years the popularity among heating engineers which it rightfully deserved. However, it is only recently that the heating profession has devoted time to serious study on the development of automatic apparatus to accomplish a reduction in fuel consumption. Manufacturers of boilers, radiation, vacuum traps, temperature control equipment and vacuum pumps, all have been working to perfect the design of their product, primarily to accomplish fuel economy.

Each piece of equipment naturally occupies the exact center of the field of vision of each designer. For this reason a heating specialty which performs perfectly on the manufacturer's test floor, may be the fundamental cause of the failure of the complete heating system, at least insofar as fuel economy is concerned.

An example of this may be found in not a few recent installations of zone control heating equipment. A zone control usually consists of a heating system in which the steam supply mains are zoned separately to the different parts of the building. Each zone is then provided with

a steam valve, actuated by a thermostat which is placed in a so-called keyroom. As the temperature in each zone varies, due to the exposure, wind direction, or for any other cause, steam is automatically admitted or turned off from that particular zone. Another function of the zone system is to provide different temperatures in different rooms of the same building in which the rooms are used for different purposes.

All of the temperature control manufacturers can provide thermostats and thermostatic control valves to accomplish these various results. There is no doubt about the fact that they work perfectly, if the engineer and contractor are satisfied, by simply the opening and closing of a steam valve.

Let's picture for a moment just what takes place in a vacuum heating system provided with zone control. Steam is supplied at sufficient pressure to provide two or three pounds per square inch at the zone valves. When heat is required in each zone, the valve opens, filling the radiation with steam. When this valve closes again a vacuum is induced in the radiation by the condensing steam. This induced vacuum or condensation vacuum, as it is often called, may build up to 15 or 20 inches or more. Frequently it is higher than the vacuum produced by the vacuum pump. This is often the case when an automatic pump is used.

If means are not provided to prevent this condition, the zone will become completely water logged. In fact, so much water may be held up in the system that the boiler may be endangered by low water. Some zone control systems have been installed with a single return line back to the vacuum pump instead of separate returns from each zone. When this mistake is made one zone will pull condensation from the return line of the other zone.

Some systems provide only one vacuum pump to handle all of the returns from the various zones. Other manufacturers insist upon a separate vacuum pump for each zone.

When water line regulators are used on the boilers of a zone system, an induced vacuum in one or more zones will cause the feeder to refill the boiler with cold water. The hot condensate is later wasted. All the efforts to save fuel by turning off a zone are also wasted.

Many troubles encountered with zone controlled vacuum heating systems have been due to the failure of the manufacturers of each individual specialty to earnestly co-operate with each other as well as with the contractor and the architect to produce a heating system which will function perfectly as a whole. The result of such co-operation will produce that fuel saving for which we so long have sought.

John J. Hayes.

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(In commenting on the discussion contributed by Mr. Hayes, Mr. F. W. Powers suggests that the difficulties caused by positive on and off action of the valves may be overcome by temperature controls which will cause the valve to take and maintain intermediate positions of opening consistent with the heat demand.)

MR. POWERS went on to state that "a return line vacuum system is essential and the different zones should have individual returns, or at least should be individually trapped into a common return communicating with the vacuum pump."

Important Feature in Temperature Control Apparatus

IF IT were permissible for me to go into the question of temperature control at this time I might give numerous statistics which the Committee of which I am a member has gathered in the last two years in connection with many buildings in the Chicago loop district which we have observed and metered for steam consumption with all types of recording instruments. It would show up many items which previously have been overlooked by heating engineers, owners, and others. At the completion of this test these data will be made public after they have been thoroughly verified.

The main feature in temperature control apparatus has been the correct application of the equipment with the proper accessory apparatus to protect and assist in the functioning of same. Much of the new equipment has to be experimented with considerably before all the bugs are finally worked out.

R. E. Gilmore.

Arc-Welded Pipe Construction

(Continued from Page 56)

arc welding. These headers are connected with pumps used to boost water pressure in case of fire, and operate at about 85 lb. pressure. Fig. 4 shows a front view, and Fig. 2 a rear view of these manifolds.

A 75 horse power turbine, used for driving a blower for forced draught on the boilers, developed a bad

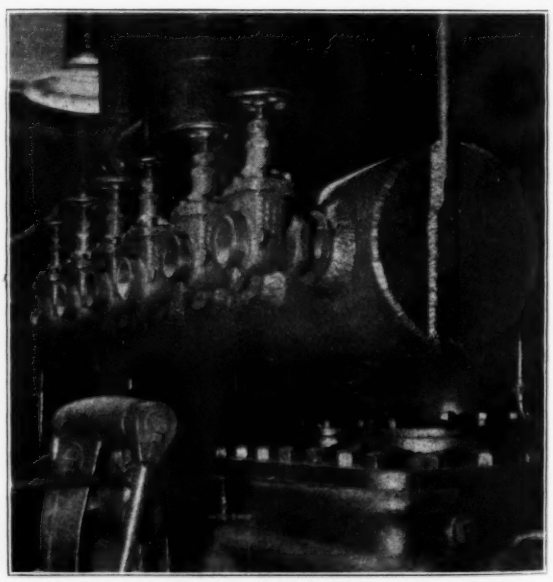
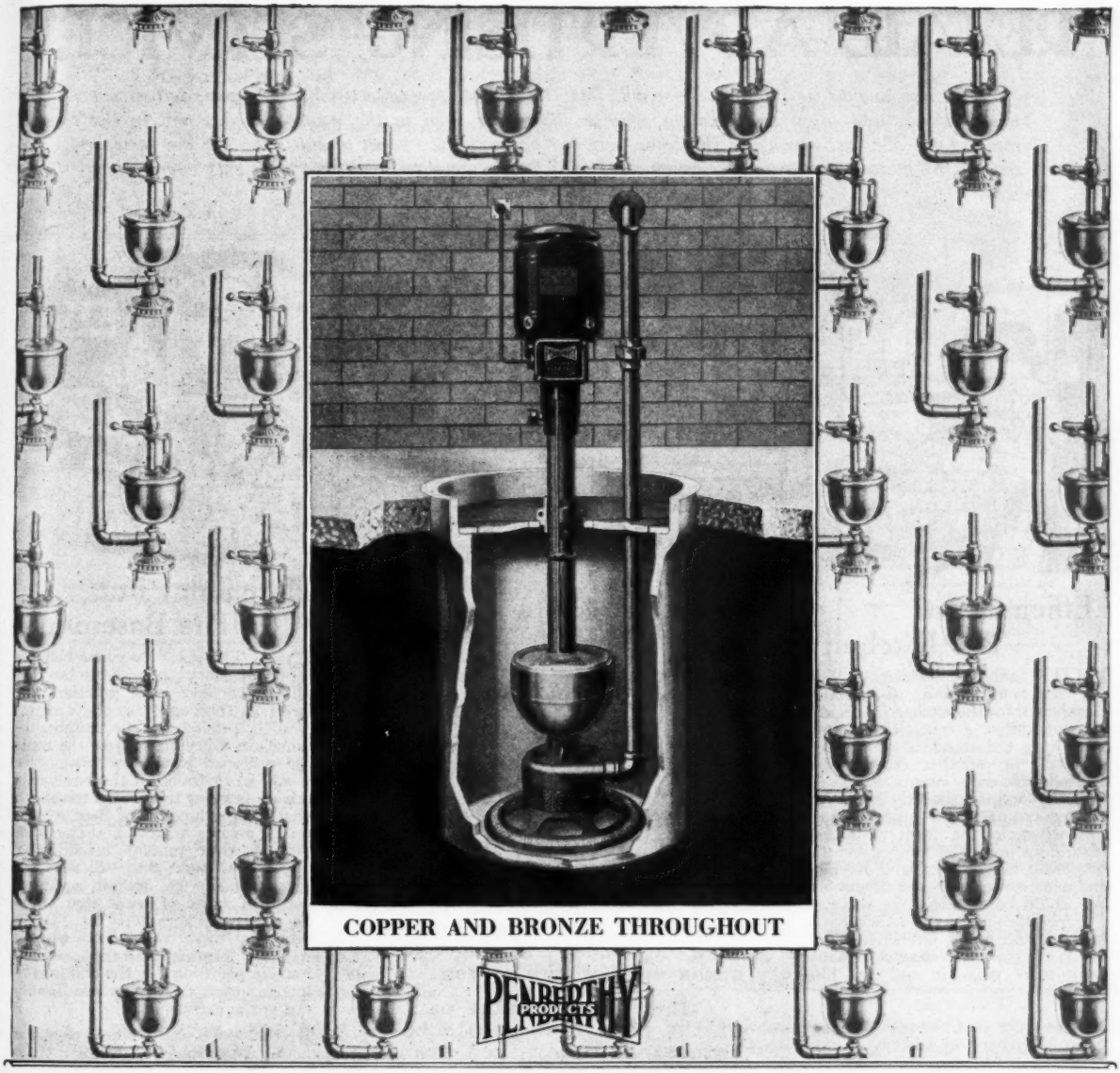


Fig. 4

crack in the exhaust casing. This was repaired by arc welding without removing the exhaust casing or doing any preheating, and only required shutting down the blower for a short time while the welding was being done. This turbine has been in operation about three years since the repair was made and no leaks have developed, and no further trouble has been experienced.



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NEWSPAPER AD No. 67

THE WORLD AT ITS DARKEST

"The world may be reaching a highly advanced state of efficiency in the minds of our engineers," remarked Harry Brown, local plumbing and heating contractor, "but the two tramps dozing in the sun by the railroad tracks don't agree.

"At any rate, in discussing the joys of the world, one of them said it would be mighty pleasant if you had only to push a button when you wanted something. 'Yes, but who is going to push the button?' asked the other fellow; which makes us wonder if we won't get too lazy to push buttons ourselves some day."

SALES LETTER

No. 30

HARRY BROWN

PLUMBING & HEATING

Two Rivers, N. Y.,
February 22, 1930

Mr. Edward Jones,
Two Rivers, N. Y.

Dear Sir:

Efficiency is the watchword of today and the merchant, banker or manufacturer who does not apply methods of efficiency to his particular business is usually found among the missing after a short career.

If efficiency, then, is so profitable to the business world why should not business methods be applied to the home? The hardest work can be delegated to modern household equipment at a tremendous saving of human energy and nerves.

The two important parts of the home that should be completely modernized are the kitchen and basement. Efficiency to the last degree should be the goal in these two sectors. Lighten the housewife's daily grind by furnishing the kitchen so as to make her work a pleasure. Bring the basement up-to-date with a modern heating system and provide an extra room in the house for the children's playroom or as a lounge room for Dad.

Very truly yours,
HARRY BROWN

HERE are two newspaper publicity items — clip them and hand them to your local paper. They represent valuable sales help.

Efficiency in The Basement

PRACTICALLY everyone believes in efficiency these days but not all who believe in it practice that belief as thoroughly as they might. This is proved by the number of homes in every city where the most old-fashioned equipment imaginable is still to be found in the basement: a heating plant that burns too much coal for the amount of heat it produces, creates a great abundance of dirt and dust, requires attention at any and all times and still does not give good service, and, in addition, causes a waste of space that could be put to advantageous use. Bring your basement up-to-date with a modern heating installation and make a playroom for the children or lounge room for the whole family out of the extra space.

(In this space your Name, Telephone Number and Address)

NEWSPAPER AD No. 68

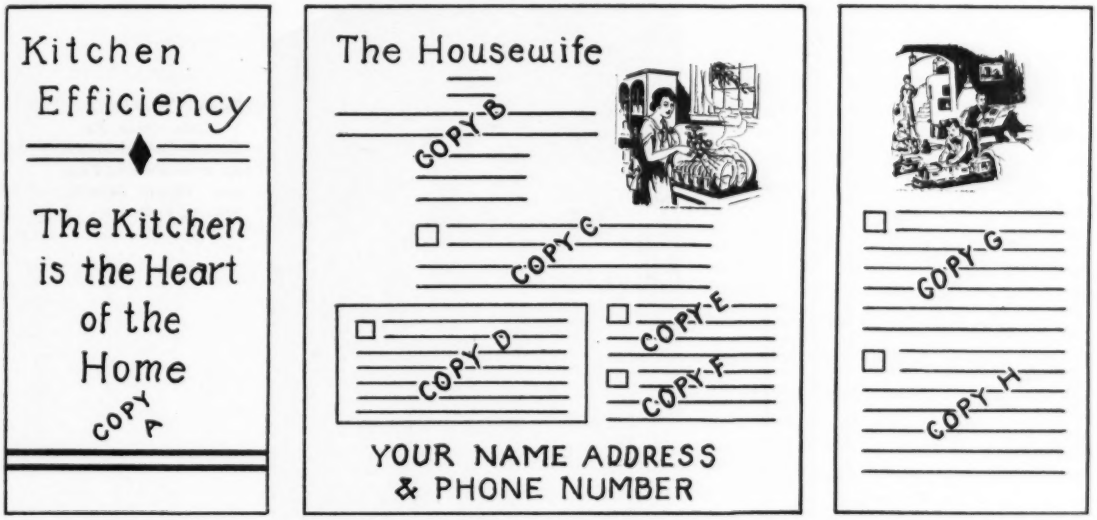
HOW TO KEEP CHILDREN AT HOME

"Many parents wonder why it is so difficult to keep their children from playing in the street in the way of passing vehicles," said Harry Brown, local plumbing and heating contractor.

"Well, if these children were provided with a place at home in which to play, there would be no necessity for their running into the street. For example, the space now wasted through the use of an old and dirt producing heating plant could be turned into a playroom for the children. Then, with an attractive place in which to play there would be no need to fear for their safety."

Layout and Copy for Circular—No. 9

Below is layout and copy for a four-page circular which can be used as a mailing piece, or which may be used as an envelope stuffer. It ties in with the ads on the other page. Complete instructions are given in the center of the page for handling the printing of such a circular.



PAGE 1 PAGES 2 and 3 PAGE 4

Here is how to handle the printing of a circular like the one shown above

Show this page to your printer. That is all you will have to do. Just above is a "type and rule layout" for the printer to follow. It is, of course, of smaller size than the actual circular, which should be made to fit the average small envelope (which the printer calls a 6¾ inch because that is its length). That means the circular will be three inches wide and six inches high. It will have four pages and will be folded once. The small illustration with this copy shows what it will look like. The words "Copy A," etc., show the printer where each piece of copy is to be placed. The same cuts shown on the opposite page in the newspaper ads will be used in the circular. They cost 35c each.

This is the way the circular will look. Page 4 is, of course, the back cover.

Copy "A" (For First Page)

KITCHEN EFFICIENCY

The Kitchen is the Heart of the Home

Copy for Pages 2 and 3—Copy "B"

The Housewife is Entitled to the Best

Copy "C"

The housewife should have all the conveniences that go to make work in the kitchen lighter and at the same time more business-like and efficient. If her work is in the home she should have the correct equipment with which to work.

Copy "D"

Increased efficiency in the kitchen means increased economy. That item alone is sufficient reason for considering the installation of time and energy saving kitchen aids. The cost of such fixtures represents an investment that will produce daily dividends worth more than money.

Copy "E"

By bringing your kitchen to the highest point of efficiency you are making a definite step toward rendering that long neglected department of the home more beautiful and inviting. Let the kitchen radiate charm and contentment.

Copy "F"

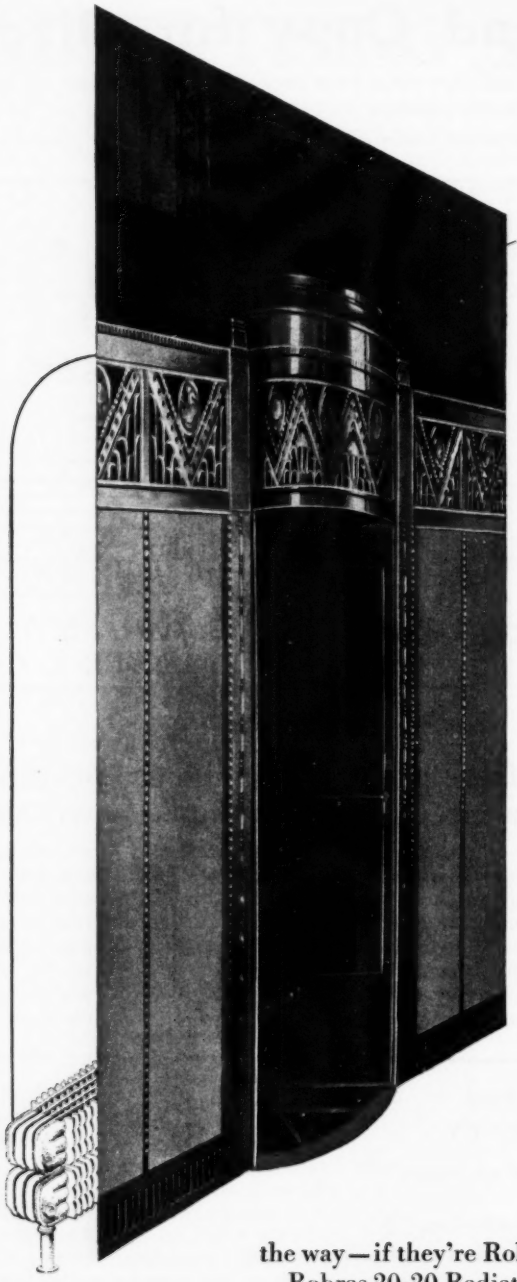
If you will telephone (insert telephone number), we will be glad to call for a personal interview and advise you on plans for bringing your kitchen up to the best standard of efficiency.

Copy "G"

Another part of the home which usually needs the attention of an efficiency expert is the basement, and the most important thing in the basement is the heating plant; begin your modernizing there. In the first place a modern and correctly installed hot water, vapor or steam heating system is far more economical than the out-of-date plant that requires constant attention of some sort.

Copy "H"

In the second place, when remodeling the heating plant, advantage should be taken of the opportunity to convert that wasted space in the basement into a playroom for the children or a lounge room for the family.



Integrity Trust Building, Philadelphia, Pa. Paul P. Cret, Architect; Isaac H. Francis, Engineer; Charles Monday, Heating Contractor.

Where the radiators went . . .

NO place to put the radiators? Put them *in the walls, out of sight, out of the way.* They're designed to be most efficient when installed that way.

If you've a lobby to equip, (like this one of the Integrity Trust Building, in Philadelphia) put them in the lobby walls. If you've a home to equip, put them in the walls, between the studs, or wherever there's a space 4″ deep. Put them anywhere out of the way—if they're Robras 20-20 Radiators!

Robras 20-20 Radiators are made of brass on entirely new heating principles, are only 20 per cent the size of cast iron! And only 20 per cent the weight! And two men can install four or five times as many in a day as they could working with cast iron radiators.

The rest of the story—with price list and data sheets—is waiting for you. May we send it to you? All we need is your name and your address. ROBRAS 20-20

ROME BRASS RADIATOR CORPORATION, 1 East 42nd Street, New York, N. Y.

Running Water in Every Farm and Small Town Home

(Continued from Page 51)

ment. A room can be built underneath the tank and used for a milk house.

Hydropneumatic System

In the hydropneumatic system the water is stored in an air-tight steel tank and is forced through the pipes to the fixtures by air pressure. To begin with, the tank is filled with air. Water is then pumped in, and the pressure of the air increases as its volume decreases. As water is used, the air pressure is gradually reduced. In all systems of this type there is a tendency for the water to absorb the air, and some provision must therefore be made for replacing it. This is usually accomplished by means of a small air pump or an air intake valve.

Table 4.—Water Capacity of a Hydropneumatic Tank With and Without Initial Air Pressure.

Gage Pressure Pounds	Water in Tank When No Initial Air Pressure is Provided Percent	Water in Tank with 10 Pounds Initial Air Pressure Percent
50	76.9	61.5
45	75.0	58.3
40	72.7	54.5
35	70.0	50.0
30	66.7	44.4
25	62.5	37.5
20	57.1	28.6
15	50.0	16.7
10	40.0	.....
5	25.0	.....

Complete equipment for a hydropneumatic system includes an air-tight pressure tank, a force pump, pressure gages, and minor fittings. The size of the tank needed for a hydropneumatic system can be figured from the information in Table 4 when the requirements for water and the facilities for pumping are known.

The effective capacity of a hydropneumatic tank is increased by having an initial air pressure. For instance, if the gas engine or electric motor which drives the pump is run every other day and the family requires 50 gallons of water each day, 100 gallons of water will have to be provided between pumpings. Assuming that a range of working pressures from 10 pounds to 45 pounds per square inch is desired, we find from Table 4 that a tank with a gage pressure of 45 pounds and an initial air pressure of 10 pounds will hold a volume of water equal to 58.3 per cent of the total volume of the tank. When the gage pressure is reduced to 10 pounds, the tank is entirely emptied of water. With 100 gallons as the water requirement between pumpings, a tank having a total capacity equal to 171 gallons (100 ÷ 58.3 per cent) would therefore be needed. Such a tank would be approximately 24 in. in diameter and 8 ft. long.

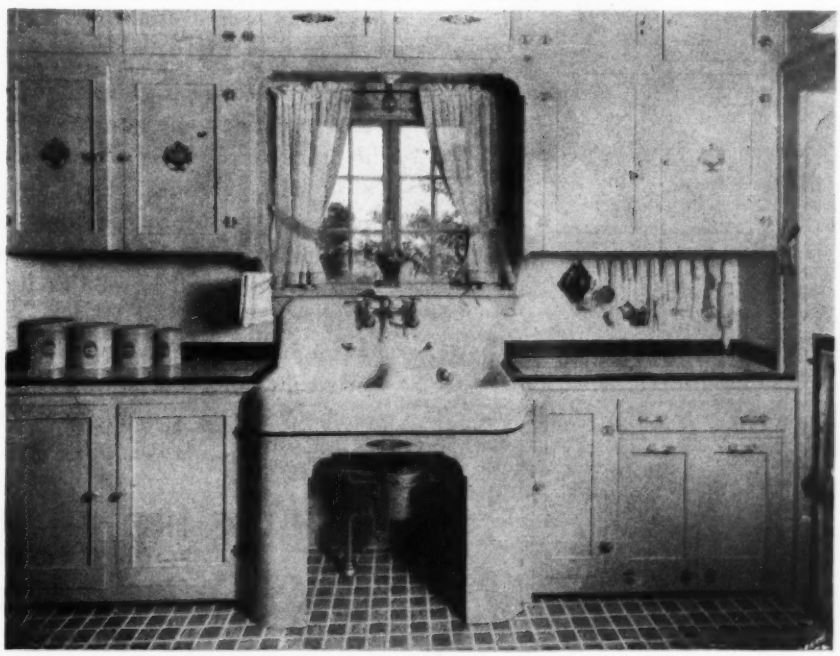
Pneumatic System Pumps Water Direct from Well

Where electric power is available, the pneumatic system is usually automatic in its operation and air is utilized for pumping the water direct from the well. It differs from the other systems in that air instead of water is kept in storage. This type of water system is often referred to as a fresh-water system, but this is rather misleading since several gallons of water must be pumped before fresh water can be obtained.

The essentials of the system are: a motor, or engine; an air compressor; a tank to hold the compressed air; an automatic, air-operated pump submerged in the well; piping; and necessary gages and fittings.

Provision for Soft Water

Except for drinking purposes, soft water under pressure is preferable to hard water. The supply of soft water, however, is usually limited, and hard water from a well must be used part of the time. This complicates



An example of interior effect possible when modern plumbing and craftsmanship is utilized

As Protection to You, We Mark It Blue

AND NOW

available in all the usual weights and sizes, ¼ to 16 inch.

REG.U.S.PAT.OFF.

TONCAN

COPPER
MO·LYB·DEN·UM

IRON PIPE

PLUMBING and heating contractors are in a better position than perhaps any other user of pipe to judge sanely the merits of any material offered for their use.

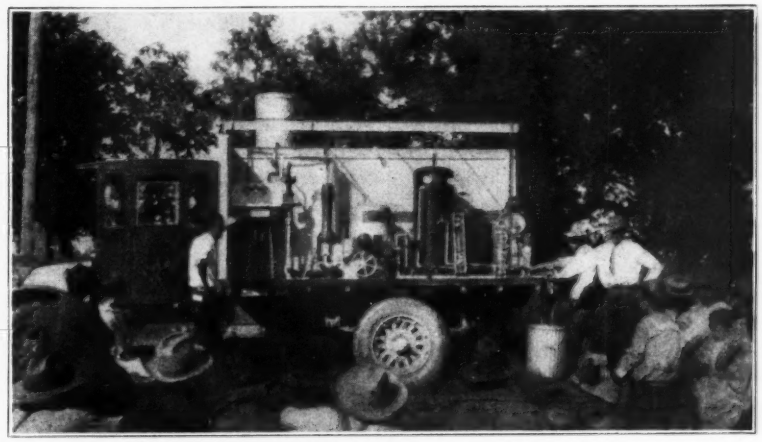
To many, the country over, Toncan Iron Pipe is not new, as it has been available in the smaller sizes for years. To others this brief recapitulation may prove of interest.

Toncan is iron—highly refined iron—alloyed with copper and molybdenum. Toncan Iron ranks as a true alloy. In the form of pipe it is extremely resistant to rust and corrosion and exhibits greatly increased life in service in plumbing and heating lines compared with the more commonly known ferrous pipes. It can be cut, threaded, bent, welded and formed easily. Its cost compares favorably with those of the generally accepted grades of wrought pipe but, due to its longer trouble free life, it proves far more economical per year of service.

Write, or ask your Supply House to get for you complete data on Toncan Iron Pipe.

REPUBLIC IRON & STEEL COMPANY
YOUNGSTOWN, OHIO

Birmingham Boston Buffalo Chicago Cincinnati Cleveland Dallas Denver Detroit
El Paso Los Angeles New York Philadelphia Pittsburgh San Francisco Seattle St. Louis



One of the University of Illinois farm water supply trucks with extension expert giving demonstration of principles involved in making installations. This demonstration work is carried on in the various counties throughout the state as an educational movement

the installation of the farm water system somewhat, for extra piping and pumping equipment are required in order to have both hard and soft water under pressure.

Where there is sufficient hard water for all needs, a water softener may be used to soften all the water used in the house, except that for the toilet, sill cocks, and for one faucet at the sink. This does away entirely with the need of a cistern.

Working Out a Water System

AN ACTUAL experience in working out a water system was told by E. R. Meacham in the last June issue of "Electricity on the Farm." The installation was made on a farm on Eagle Heights overlooking Lake Mendota in Wisconsin. It was a case where an original system was in use having an old fashioned force pump with an ordinary windmill head. The power was supplied by the windmill, but there was also an open, spur-geared pumpjack and a gas engine for calm days.

The well is about 35 feet from the house. The water was pumped to a 350 gallon hydropneumatic pressure tank in the basement, but this tank supplied water to the house only; there was no connection between it and the barns. At a point below the frost line, the pump had a valve that could be turned one way to force the water through an underground pipe into this pressure tank—and another way to bring it to the top.

Since the outdoor tanks were not used in the winter, they were filled by means of valves at the open concrete reservoir near the pump, and the pipes were so laid that they would drain when the valves were closed. But the tank in the barn was most useful in the winter and the pipe supplying it was buried below the frost line. For convenience the valve controlling this supply was at the tank in the barn.

Though the pipe was well buried, and the tank and valve were safe in the barn, there was a weak point in this system. That was the concrete tank out there in the open. It had to be heated all winter.

A Change Is Made

After years of use the air pump supplying air to the hydropneumatic tank had ceased to operate, and the tank became water-logged.

"We couldn't get near as much water in the tank as we used to," said the owner.

That was the way it seemed, of course. But that was not really true. The tank was so nearly full all the time that only a little could be added, and the remaining air could only force a little water out of the faucets. The continual stocking of the tank heater throughout the long winter took a lot of time.

Then came the electric line. The owner was eager for the convenience of electric power and decided to fix up his old pumping outfits.

A few days later his son brought his instructor in agriculture at the high school home with him to look over his farm project.

"Now that you've got electric power can't we fix up a completely automatic pumping system?" he asked.

"Yes. I've been figuring on putting a 2 H.P. motor on that pump."

"Why get such a big one? Of course the hole may be drilled pretty deep, but how far is it to the water? That's the important thing," said the teacher.

"Oh, it's only about 80 ft. to the water."

"You haven't more than 30 head of live stock all together, have you? You really do not need more than 300 gallons an hour. A ¾ H.P. motor is plenty big enough to lift that much water 80 ft., and put a lot of pressure behind it, too. Now, for that outdoor location, you had better choose an entirely enclosed jack, driven by gears or chain. If this is going to be an automatic job, you want it to be off your mind altogether."

"That sounds good to me," said the owner, "but the thing that would save the most work would be an electric heater of some kind to keep that big tank at the well from freezing solid."

"You don't use that tank in the winter, do you?"

"Sure do. How else would we get water to the barn?"

Then he explained that by the old system he must pump into this tank exposed on top of the ground before the water could get into the deep laid pipe that carried it to the barn.

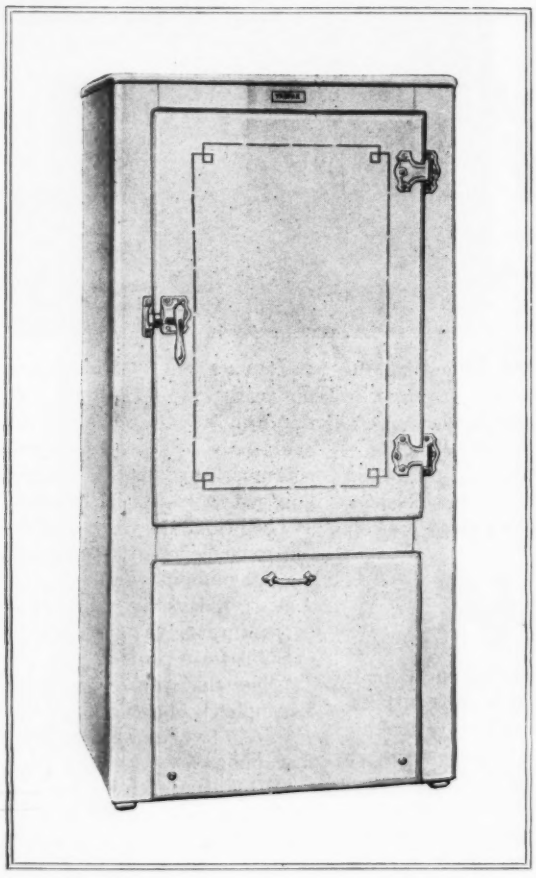
Then the agriculture instructor got busy in real earnest. Together they planned and later had put in such improvements to the old system as made the new installation a model.

The Actual Work

First they enlarged the pit or dry well around the old pump so that when walled and floored with concrete, it was fully 5 ft. square and 7 ft. deep. The metal casing

(Continued on page 137)

Refrigeration



By
H. T. HALL

—*description of a multiple unit system*

INDIVIDUAL unit refrigerators —that is where each box has its own refrigerating unit entirely separate from all other boxes—have been used for household and apartment refrigerators for some time. Many plumbing and heating contractors are selling these units.

The individual electrical unit, however, in group installations such as occur in apartment houses, has some limitations which may be overcome by using the multiple unit system with the apparatus located in the basement or in some other available location where the small amount of noise will not be heard.

As compared with brine circulating systems, which most closely approximate the multiple unit system in general arrangement, it has been found that the elimination of brine coolers, brine pumps and the long runs of expensively covered brine lines has reduced installation costs on the multiple unit system and has eliminated what little noise is made by the individual unit.

For the past three years multiple unit installations employing sulphur dioxide and methyl chloride have been used in apartment houses with considerable success especially in installations up to forty boxes. Anywhere from 8 to 12 boxes are placed on one compressor although there are cases where up to 60 have been used and a larger number of boxes simply means the adding of a sufficient number of compressors to care for the additional refrigerators; as each compressor takes care of several units, this system has been designated "multiple unit."

Like every other new device and invention the multiple unit system has gone through various stages of development, until the present methods of installation were adopted and for that reason a brief description of a method which has met with success in operation will be both interesting and instructive.

The Evaporating Unit in the Refrigerator

In this scheme each refrigerator is equipped with an evaporating unit which is fitted with a float valve and two stop valves. The evaporating unit is operated flooded and the height of the refrigerant is governed by the float valve. There must be enough space provided above the liquid for gas so as to permit a complete separation of the gas from the liquid in order that none of the liquid will find its way into the suction line creating a frosted or wet condition on the line outside of the refrigerator.

Controlling the Temperature

The temperature of the boxes is controlled by the suction pressure and a pressure control switch is placed in the suction line near the compressor in the basement. The refrigerating mediums most commonly employed are the two previously mentioned, namely, sulphur dioxide, which has the pressure varied from 10 pounds gauge to 2 inches of vacuum, and methyl chloride, which ranges from 20 lb. gauge to 5 lb. gauge. In order to adjust the temperatures in the boxes, it is necessary only to change the adjustment of the pressure switch, higher operating pressures raising the temperature and lower operating pressures lowering it.

The Piping System

In arranging the piping between the compressors and the evaporating units in the boxes the liquid and suction lines are run in parallel, as illustrated below, and one of the pioneers in this class of work has adopted the method of carrying the liquid line to the under side of the roof and the running of a header in this location taking drops off of the header for each vertical group of boxes. These drops continue down past the lowest refrigerator and terminate on the basement ceiling where they are finished off with a stop valve having a plugged outlet.

Pipe sizes are usually made ⅜-inch for the liquid line and header, and ¼-inch for the drops. The suction line is carried down from the top box of each group picking up the lower boxes as it proceeds toward the basement and is generally made ⅜-inch in size. In the basement these suction lines are collected into a suction header, the size of which is determined by the number of boxes and the capacity of the compressor. At each refrigerator, branches from both lines are carried out through the wall and connected to the evaporating unit in the refrigerator.

Runouts to Boxes

It has been found necessary to exercise considerable care in connection with the matter of refrigerator runouts. In the first place they are made with ¼-inch and ⅜-inch copper tubing and in the second place they are made long enough that sufficient spring is obtained to accommodate any slight movement of the box.

Testing Out the Lines

As the piping is generally installed long before power is available or the compressors ready for use, it has been found advisable to evolve some method of testing which will demonstrate the tightness of the pipe lines as soon as they are completed. For this purpose a drum of ammonia and a pressure gauge are connected to the liquid and suction lines and the ammonia pressure on the line is allowed to go up until the gauge shows 125 lb. pressure. If this pressure is not reached by the ammonia, hot water is poured over the ammonia drum until the desired pressure is obtained.

When this point has been reached all joints are tested by smell, or, after the system is in operation, by aqua ammonia on a rag which produces a white fume in the presence of sulphur dioxide. If any leaks exist with methyl chloride a sulphur taper will show it by burning green. Soap suds on the joints may also be used with methyl chloride.

After the joints have satisfactorily passed the pressure test the ammonia drum is shut off and the pressure on the lines is released.

The Dehydrator

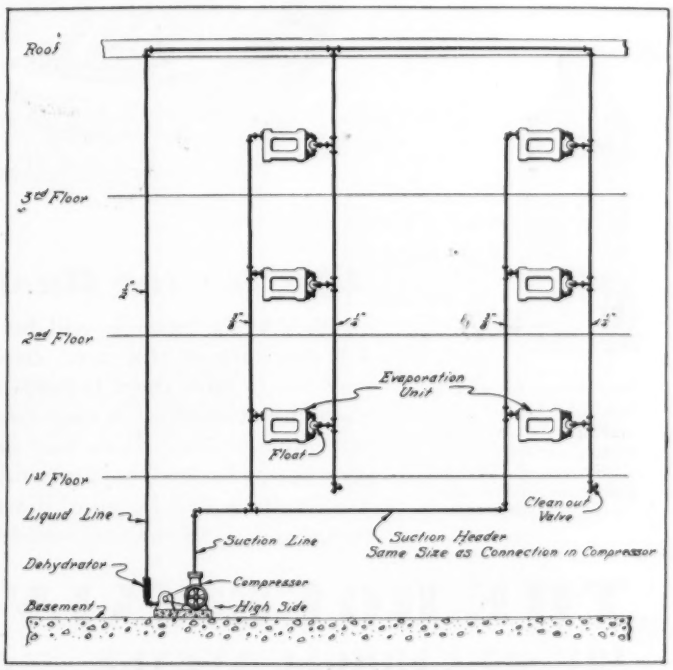
It is important to have a dehydrator in the liquid line near the receiver and this may be constructed of a piece of 3-inch pipe with pipe flanges on both ends. It must be arranged so that the liquid enters the bottom, passes up through a screen above which is placed a charge of granulated calcium chloride and then through another screen and a sponge into the liquid line. A by-pass around the dehydrator should also be supplied so that the dehydrator may be removed later without shutting down the system.

Starting Up the System

When the compressor or compressors and the evaporation units with the float valves have been installed and properly connected up to the pipe lines, the liquid stop valves on each evaporation unit are shut off and air pressure is pumped into the high sides through the dehydrator. Then each liquid drop pipe is blown out through the valves in the basement on the bottom of the drops. These valves are then closed and a test pressure of 150 pounds is pumped into the liquid line also passing through the dehydrator. After the testing pressure has been put on the lines a vacuum is drawn on the whole system and it is allowed to stand for 12 hours, to see that the vacuum is held.

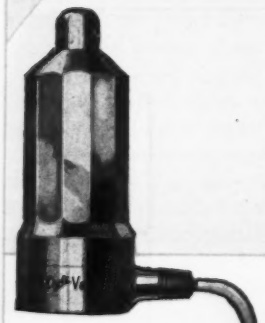
After the vacuum test the sulphur dioxide or methyl

(Continued on Page 166)



Typical piping system for multiple unit refrigeration

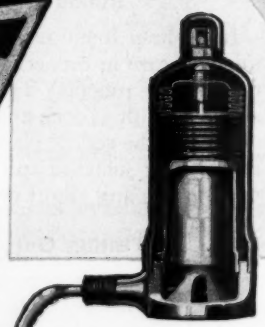
ATTRACTIVELY PACKAGED for Quick Sale



New design. Beautifully finished in lustrous, non-tarnishable chromium plating. Rich—different—distinctive. Written guarantee for five years.
(Patents applied for)

The "Better Business" Box

AIR VALVE business will be better with you if you display this new, attractive, 3-color display box in your shop. It holds 12 of the new Dole Vacuum Valves No. 2-B, each conspicuously cartoned individually. You don't sell one at a time—but several, one for each radiator and 6-B's for the mains. Yes, business *will* be good if you push this profitable specialty. Write for complete information.



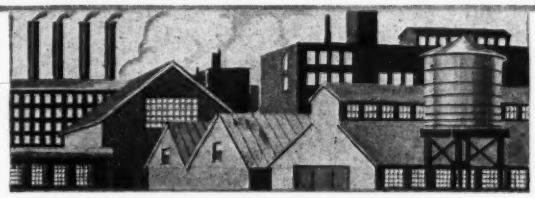
Triple-action construction insures a positive performance. "Holds the vacuum." 100 per cent automatic. In actual test has shown remarkable results.
(Patents applied for)

THE DOLE VALVE COMPANY

1913-33 CARROLL AVENUE :: CHICAGO, ILLINOIS

SUPPLY NEWS

AMONG MANUFACTURERS, WHOLESALERS AND SALESMEN



Crane Co. Building New Plant in Los Angeles

Crane Co. of Chicago began construction in January on the first unit of a new plant to be located in the Union Pacific industrial tract, Los Angeles, Calif. The first building will be of steel and corrugated iron construction, 400 x 80 ft., and will be equipped with a five-ton magnetically operated crane.

◆

Western Supply Association to Meet in March

The Western Supply Association has arranged to hold its annual meeting at Del Monte, Calif., on March 14 and 15. The meeting is to be an important one as the new trade practice rules are to be discussed. President George W. Manierre of Los Angeles, has recently prepared a statement dealing with the rules and, according to Secretary Comegys, a large attendance is expected.

The Western Supply Association was formed approximately a year ago at Del Monte, Mr. Manierre having been chosen as the first president.

Clarence F. Harvey Appointed to National Business Survey Committee

Clarence F. Harvey, president of the National Pipe & Supplies Association, has been appointed by Julius H. Barnes as a member of the national business survey committee, which developed out of President Hoover's recent business conference.

◆

Hajoca Corp. Opens Branch in Bridgeton, N. J.

The Hajoca Corp. of Philadelphia, Pa., opened the latest addition to its chain of branch houses on February 8, at Bridgeton, N. J. The opening was formal and drew an attendance of approximately 300 guests.

The branch office is housed in a building about 50x150 ft., and contains an excellent display space as well as a modern office arrangement. A large pipe shed has been erected near the railroad siding and every feature of this new equipment has been designed for speed in loading trucks.

New branch of Hajoca Corp., at Bridgeton, N. J.

Alabama Pipe Co. Opens New Warehouse

The Alabama Pipe Co., Anniston, Ala., has opened a warehouse at 49-27—31st street, Long Island City, N. Y., to better serve the Metropolitan New York and adjacent territories. This warehouse is located between Borden and Hunters Point avenues, within a short distance of the Queensboro bridge. The plot contains about 60,000 square feet and is served by Long Island railroad tracks to facilitate incoming shipments, and arrangements have already been made with the railroad company to handle shipments of less than carload lots to points outside of the Metropolitan district. Domestic and foreign steamship piers can easily be reached by truck to facilitate the handling of export shipments. The warehouse will be under the direct supervision of B. A. Schutz and his assistant, W. J. Adelman, both having had long experience in the soil pipe and fittings' business.

◆

Crane Co. Opens Showroom at Atlanta Factory Branch

The Crane Co. of Chicago, Ill., has recently opened a new display room at its factory branch located on the Washington street viaduct in Atlanta, Ga. L. J. Spencer is manager of the Atlanta factory branch and is assisted by E. L. Pugh.

◆

Mueller Brass Co. Completes New Building

The Mueller Brass Co., Port Huron, Mich., has recently completed, in that city, its new administration building, which includes every facility and feature of the present day office structure. The new building is fireproof and of reinforced concrete and faced brick construction. An air washing system and an individual heating system, using oil burning equipment, are two notable features in the new structure. The air washing system aids in maintaining more healthful working conditions in all seasons of the year; the air in the interior of the building is changed every four minutes and the temperature is held uniform. The windows let in a maximum amount of light but exclude dust, smoke and dirt and cannot be opened as ventilation is controlled mechanically.

The unique plumbing installation of the building, which is said to be the first of its kind in the world, employs copper tubing to conduct water, gas, steam, thermostat lines and oil. This system was installed by Gresley & Co., plumbing contractors of Port Huron.

◆

Haynes Stellite Co. Appoints Officials

At a recent meeting of the board of directors of Haynes Stellite Co., unit of Union Carbide and Carbon Corp., E. E. LeVan was appointed general sales manager and J. H. Maguire was made works manager. Other appointments were F. T. McCurdy, plant superintendent; J. R. Brown, F. L. Secord and Everett Page, assistants to the superintendent, and L. H. Brown, research engineer.

◆

Hajoca Corp. Plans Co-Operative Merchandising

About 400 master plumbers attended a meeting on Tuesday evening, January 28, held at the offices of the Hajoca Corp., Philadelphia. The purpose was to acquaint the contractors with the co-operative merchandising campaign being promoted by this company. Chairman J. Harvey Borton and other officials were present. The plan was outlined by Charles J. Crockett who has carried on similar campaigns in Detroit, New York, Boston and Baltimore and by John Goldbright of New York.

A second meeting of a similar nature was held at the firm's auditorium on Wednesday, February 5, and a third meeting was held on February 12.

◆

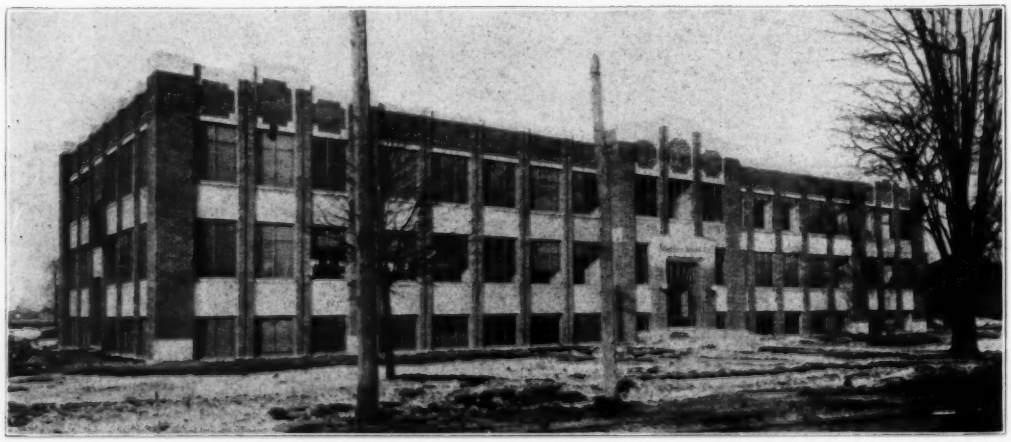
San-Equip, Inc. Its New Name

Chemical Toilet Corp., East Brighton and Glen avenues, Syracuse, N. Y., has changed its name to "San-Equip Inc." The company also announces that it has added two new products to its line, filter pipe and drain pools for septic tanks.

◆

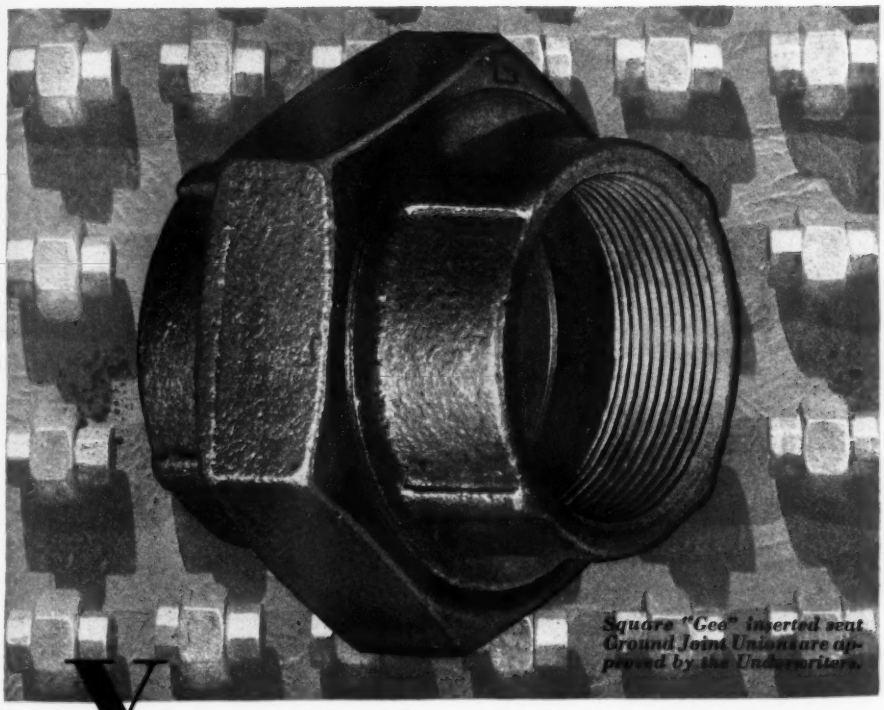
Manufacturers Exhibit at Iowa Exposition

The Delco-Light Co. and the Duro Co., both of Dayton, Ohio, were exhibitors at the third annual Iowa Farm and Home Exposition held in Des Moines, Ia., January 14, 15 and 16.



The new administration building of Mueller Brass Co., Port Huron, Mich.

Off to a Greyhound Start



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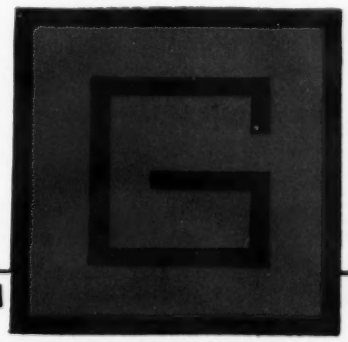
SQUARE Pipe



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DRAINAGE, BRASS

1930

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PLUMBING & HEATING CATALOG

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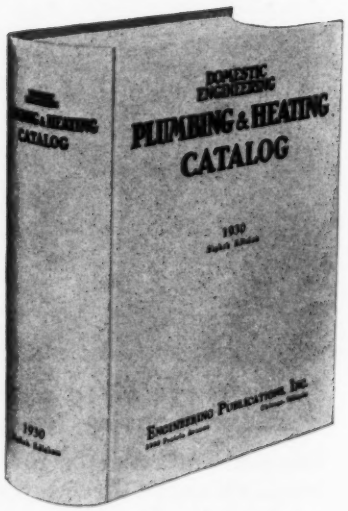

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DOMESTIC ENGINEERING

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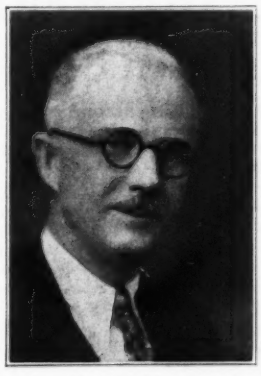
Personal Mention

ROLLAND J. HAMILTON, who was recently made president of American Radiator Co., New York City, succeeding Theodore Ahrens, resigned, as reported in the February 8 issue of DOMESTIC ENGINEERING, became associated with the company in 1905 when he entered the general offices at Chicago, following his graduation from the University of Chicago Law School. Four

Rolland J. Hamilton

years after entering the service of the company he was made assistant secretary and in 1913 became secretary. When the United States entered the World War Mr. Hamilton was placed in charge of the company's affairs in Washington and in 1921 he resigned to practice corporation law, but was retained as legal counsel by the company. In October, 1927, Mr. Hamilton gave up his law practice to become vice president and secretary of the radiator company, serving in these capacities until January 28 of this year, when he was made president. For the time being at least, in addition to his duties as president, he is continuing as secretary of the company. Mr. Hamilton resides in Bronxville, N. Y.

P. H. HOLTON, associated with Evins F. Glore & Son, Inc., Grand Central Terminal building, New York City, has been made vice president of the company. Mr. Holton is well known in the heating industry, having been connected with both the Advance Boiler Corp. and Abram Cox Co., and in his new office with Evins F. Glore & Son, Inc., will supervise heating materials' sales.



P. H. Holton

JOHN J. MILLIKEN, formerly New England representative for the Kennedy Valve Mfg. Co., Elmira, N. Y., and in the employment of that company for over ten years, has recently been appointed New England sales representative for Spang, Chalfant & Co., Inc., Pittsburgh, Pa. Mr. Milliken has opened offices at 436 Park Square building, Boston, Mass.

A. K. ROOT has been made vice president of the American Radiator Co., New York City. Mr. Root for some time has been in charge of the company's specialty division.

P. D. BENNETT, who has been connected with the C. A. Dunham Co. of Chicago for some time has been transferred from the Chicago offices of that company to the Boston office, where he will have charge of the New England district. CLARK KEELER, who has been temporarily in charge of the Boston headquarters, returns to the Chicago office of the same company.

F. W. BROATCH has resigned as New York manager of the United States Sanitary Mfg. Co., Pittsburgh, Pa., and has left on a trip around the world. In his announcement of this made at the annual dinner of the Metropolitan Trade Golf Association, of which he is a past president, Mr. Broatch stated that this action is being taken because of the ill health of Mrs. Broatch and that he is not retiring from business permanently.

W. S. Killam

W. S. KILLAM, who was president of the McRae & Roberts Co. and the subsequent consolidation of companies known as the General Brass Co., Detroit, for fifteen years, has been appointed, after two years' absence from the business world, general manager of the Capitol Brass Division of Bohn Aluminum & Brass Corp., also of Detroit. W. S. CHILMAN, formerly vice president and sales manager of the McRae & Roberts Co., as well as the later consolidation, is now associated with Mr. Killam in the Capitol Brass Division. Coincident with these appointments, it is announced that the Capitol Brass Division will henceforth operate as an entirely separate unit of the Bohn Aluminum & Brass Corp.

W. S. Chilman

CHARLES H. RAMSEY, for eleven years assistant manager of the St. John, N. B., branch of The James Robertson Co., Ltd., of Montreal, Que., has been appointed manager, succeeding the late E. J. Terry, who died recently in Toronto, Ont. Mr. Ramsey entered the employ of the Robertson company as an office boy and worked his way up to a position on the sales staff, later becoming assistant to Mr. Terry. Succeeding Mr. Ramsey as as-

sistant manager is J. PACKARD CAMPBELL, who has been heating engineer for the James Robertson company for several years.

F. A. La Baw

F. A. LABAW, formerly sales manager of the Marvin Radio Tube Corp. of Irvington, N. J., and the Denney Tag Co., West Chester, Pa., has recently been appointed sales manager of the Standard Tank & Seat Co., Camden, N. J.

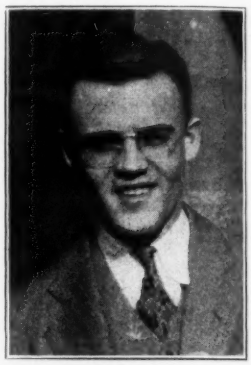
J. F. MCINDOW, formerly manager of the Portland, Ore., branch of the American Radiator Co., has been transferred to Seattle, Wash., and E. L. WILKINS, previously in charge of the Spokane, Wash., office, has been transferred to the Portland branch.

F. J. MEYER, who has for some time represented The White Mfg. Co., Newark, N. J., in the Northern New Jersey territory, has in addition been given the Metropolitan New York area.

A. MILTON BUCK, manufacturers' representative, Washington, D. C., was recently appointed to represent the M. S. Little Mfg. Co., Hartford, Conn., in the southeastern territory, including Virginia, North and South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana and Tennessee. Mr. Buck is active in both the local and national affairs of the Plumbing and Heating Salesmen's National Association, and is a former treasurer of the national body.

J. H. SELFRIDGE, president, and J. C. NORTON, vice president of the Selfridge-Norton Mfg. Co., Cleveland, Ohio, are combining business with pleasure and spending the next few months in Florida.

G. MASON PRICE has been appointed sales representative of the Blake Specialty Co. of Rock Island, Ill., to cover the Canadian provinces of Quebec and Ontario. Mr. Price will have his headquarters in Montreal, Que.



Frank C. Hackett

FRANK C. HACKETT has recently been appointed representative in the state of Iowa for the seat department of Brunswick-Balke-Collender Co. of Chicago. Mr. Hackett's headquarters are in the Security building, Des Moines. He is the son of Charles P. Hackett, well-known manufacturers' representative of Philadelphia, Pa.

J. J. MILLIKEN, who has been acting as a manufacturers' representative in the Boston, Mass., territory, is now devoting his entire time to the representation of Spang, Chalfant & Co., Inc., of Pittsburgh, Pa. Mr. Milliken has moved his offices to 436 Park Square building, Boston.

GIVE THE HEATING SYSTEM
Its Chance:-
Give the heating system its chance to operate at its highest point of efficiency. Give the customer, who invested his good money in that heating equipment, a real return on his money.
Breezo-Fin Unit Heaters increase the heating efficiency of any system. They cut down the fuel bills because they keep up the proper distribution of heat.
They are light in weight—easy to install and come in proper types for any heating job. Also, and important, they are made in a wide range of sizes—so that you can install exactly the right unit on every job.
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New York Life Insurance Company Building, New York. Cass Gilbert, Inc., architects. Equipped with plumbing fixtures made from Solid Nickel Silver* *by the* Meyer-Sniffin Co., New York.

SOLID NICKEL SILVER* PLUMBING FIXTURES by MEYER-SNIFFIN

Solid Nickel Silver, with its unusually attractive color—with its brightness and lustre—adds a note of permanence and quality found in no other suitable material. It is corrosion-resisting. It is easy to clean. Even under severe use Solid Nickel Silver plumbing fixtures will not lose their silvery lustre or become unsightly... The toughness and wear-resistance of Solid Nickel Silver plumbing fixtures surpass those of materials more commonly employed. When properly prepared with a sufficiently high percentage of Nickel, they possess a hardness and color comparable to Pure Nickel... Solid Nickel Silver plumbing fixtures are manufactured on a production basis by many fabricators of sanitary equipment. They meet the requirements of plumbers who welcome the opportunity to use the most modern type of equipment.

18% 22 Nickel SILVER

[*Diamond Metal is the name used by the Meyer-Sniffin Co. to identify its Nickel alloy used in manufacturing Nickel Silver plumbing fixtures. This is a solid white metal and contains a high percentage of Nickel.]

INCO NICKEL THE INTERNATIONAL NICKEL COMPANY (INC.), 67 WALL STREET, NEW YORK, N. Y. INCO NICKEL

Trade Practice Rules
Credit
Time Payments
Business Conditions

Joseph A. Maynard, president

Eastern Supply Association hears comprehensive discussion at New York meeting

INTENSITY of interest, greater even than was evinced by the membership of the Eastern Supply Association at its meeting last October when the fair trade practice rules were established as an institution, was apparent at the meeting held February 12 and 13 at the Hotel Astor, New York City, over which President Joseph A. Maynard, Waltham, Mass., presided. This concern with effort toward bettering business relations within the plumbing and heating industry exclusive of all else throughout the meeting, the attendance at which was the largest in the history of the association, was demonstrated in the attention lent to the program. The program brought addresses, dealing with issues uppermost in the minds of everyone, by F. W. Swanson, president and commissioner of the National Plumbing and Heating Institute, Chicago; L. F. Flie, Boston, general counsel of the institute; F. S. Jefferies, secretary of the Illinois Credit Bureau, Chicago; L. W. Smith, Jr., of Minneapolis Honeywell Regulator Co., Minneapolis; W. C. Clark, vice president and economist, S. W. Straus & Co., New York City; L. H. Goldbright, Jr., vice president and treasurer, Heating and Plumbing Finance Corp., New York City; also many prominent manufacturers and well known wholesalers.

F. W. Swanson Describes Institute

Facing an audience on the first morning occupying every seat in the spacious meeting room, with standees in some places three deep, Mr. Swanson opened his discussion on the relationship of the national institute with the trade practice rules by a fitting reference to President Lincoln, whose accomplishments and ideals gave the country a new standard of self-government, similar to which in principle is the self-government of business through the trade practice rules and the national institute. Concerning the response with which the movement has met, he said that generally manufacturers have acted quickly as can readily be appreciated by the wholesalers because of the functioning of the institutes of the manufacturing groups, the withdrawal of all special prices and the effecting of published prices; but, on the other hand, wholesalers as a group have not grasped fully the benefits the rules offer their businesses. In connection with the degree of response with which the national institute is meeting, Mr. Swanson pointed out that 425 signers have become members since January 1.

In going over the rules, dilating on those in which the wholesalers are most concerned, he explained at length No. 4, which covers selling price discrimination, and No. 9, which deals with lump sum bidding. Mr. Swanson also stated that it has been clearly shown that the national institute, completely established, can interpret accurately and supervise rigidly the rules, but added that a large measure of its effectiveness depends on the full support of the wholesalers. Requesting that all complaints be sent to the office of the institute at the outset, thus preventing any unfair practices from getting a foothold, and advising wholesalers to sell the principles which the rules involve to the contractors, Mr. Swanson concluded his talk.

Mr. Flie in his message went over the rules, reducing the phraseology of each to the simplest of language, explaining that they are merely recitals of business practices that have grown through the general determination of the industry to swell volumes and have been condemned. At the conclusion of the talks of both Mr. Swanson and Mr. Flie questions were raised and answered that were indicative of intense interest.

Mr. Jefferies, former secretary of the National Association of Credit Men, after qualifying himself by saying that he has been a close student of credits from coast to coast for the past nineteen years, stated that the centralized credit bureau in Chicago, which has control over the plumbing branch of the industry but not over that of heating, finds that 30 per cent of the accounts of the former run over sixty days, while 70 per cent of the latter run beyond that period. Recounting in part the progress that has been made in credit technique, the speaker outlined the procedure that has been successful in Chicago from the standpoint of wholesalers dealing with plumbing contractors.

In this regard he stated that full power of passing on credits, an absolute requisite to success, has been given him as secretary, even to the extent of determining from a financial statement whether or not a man contemplating going into business should be accommodated with credit. Besides stopping the taking of unearned discounts of 5 per cent, which many large contractors insisted upon doing after the expiration of the discount period, Mr. Jefferies described the procedure for the establishment

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If you too would enjoy the economy and satisfaction of this time-tried, time-proved pipe for as many tomorrows, specify "Spang" on your Welded Pipe requisitions,—"the pipe that Time forgets."

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of an arrears sheet which is the keynote of the system. In this regard he said that a list of all master plumbers was sent to participating wholesalers, each one of whom indicated the amount owing together with the facts surrounding the account, and from this the bureau listed the names of those contractors whose accounts were behind on an arrears sheet and fixed a date for clearing them up. The arrears list was then filed, the speaker further said, with each wholesaler with instructions to sell the contractors listed for cash only.

In conclusion Mr. Jefferies said that new bureaus are being formed in many cities, all when possible closely co-operating, with the result that through the arrears sheets credit losses are reduced to a fraction of 1 per cent. Again questions were put from the floor, one of these concerning the legality of such a bureau which brought the answer from Mr. Jefferies that credit is a privilege and not a right, also that court decisions, while not unanimous in findings, have set up nothing in the way of an obstruction.

Advocates Time Payment Selling

In advocating that the time payment plan, an old, highly successful method of selling in many fields but one that is comparatively new in the plumbing and heating industry, be considered more seriously, Mr. Goldbright pointed to the tremendous potential replacement market represented in the eleven million homes without bathrooms and the seventeen million that are without modern heating throughout the country. "Of the eight billion dollars spent annually on the finance basis, the plumbing and heating field gets a very small share," he continued, "and because master plumbers and heating contractors are reluctant in taking up this means of selling, wholesalers should do their utmost in arousing the public to ask that they be permitted to pay in this manner, as it puts the contractors' business on a discount basis." This, he pointed out, requires that wholesalers deal with reputable contractors because people getting a poor job will not pay the finance company.

From experience, he continued, because of a close scrutiny of the purchaser's character, his equity in his home, etc., there is a loss on but one out of every two thousand installations. In conclusion he urged that this plan of financing, which today is a permanent part of the business structure of the country, be accepted with the assurance that any questions addressed to Frank S. Hanley, secretary of the association, would be answered by his company regardless of with which of the three hundred or more finance companies business is done.

In an analysis of the construction outlook for the year, Mr. Clark presented a picture tinged with optimism, in that building which has been about on a par with the automobile industry fell off last year, permitting considerable of the surpluses to be absorbed. Another of the reasons offered why 1930 should show more activity was the easier money since last October, and now the lower rates since Wall street as an investment medium has lost much of its attractiveness. Still another was the business stimulating campaign inaugurated by President Hoover.

Those factors likely to temporarily retard building to some extent were enumerated by Mr. Clark as lying in the fact that many of the savings banks and building

1855 - SEVENTY-FIFTH ANNIVERSARY - 1930

ONLY WHEN A PLUMBING INSTALLATION FUNCTIONS DEPENDABLY
IS THE CONTRACTOR WHO INSTALLED IT REMEMBERED . . . KINDLY

CRANE

FOR THREE-QUARTERS OF A CENTURY, CRANE CO. HAS DEVOTED
ITSELF TO THE TASK OF PERFECTING PIPING MATERIALS
THAT WILL PERFORM JUST THIS GOOD-WILL
BUILDING SERVICE FOR THE PLUMBER.

and loan associations, due to heavy withdrawals, find they do not have funds available for making loans. These drawbacks will probably disappear within three or four months when the public have re-established the accounts lost in stock investments, he said. In most sections, he continued, residential building is not likely to look up, but on the other hand the government has established a tremendous building program, as have utilities companies. An average of 11½ per cent vacancies in office buildings is quite likely to be absorbed within a reasonable time, according to Mr. Clark, and in summing up added that the country's volume should be 5 or 10 per cent better than last year.

F. W. Swanson

"The plumbing and heating industries must abandon their defensive attitude and launch an offensive campaign in order to take the place in business they should hold," said Mr. Smith speaking on "What We Are Doing to Improve Conditions in Our Industry." Continuing, he said the Harvard report of some months back was not as effective as it might have been because it did not offer a solution for bettering the unhealthy conditions set down in its findings.

In describing the manner in which he has set out to find a remedy, the speaker said, "We sent questionnaires to a number of manufacturers and wholesalers, asking the former for an estimate of the margin of profit on their products for the jobber, and the latter the actual margin." The range of the manufacturer's estimate, he continued, was from about 25 to 33½ per cent, while that reported by the jobber was from about 10 to 22 per cent, or an average of 18.53 per cent, of which 17.9 per cent must be charged for overhead. This, he said, leads to selective selling, the establishment of resale prices as well as education in merchandising and the careful choosing of personnel. Finally, he said, "An opportunity better than ever before exists now to properly merchandise products."

Buyers Must Co-operate

Ollin C. Eckley, secretary of the Iron Plumbing Specialty Manufacturers' Association, Ypsilanti, Mich., responding to an invitation from President Maynard, stated that all the members of his organization have a tremendous interest in and have signed the agreement to the fair trade practice rules. After asking the question, "Are buyers going to be in on rules or are they just for sellers," Mr. Eckley said: "We believe that if the rules are to be made a success all parts of the organization should co-operate, especially buyers."

Clarence Harvey, Detroit, president of the National Pipe and Supplies Association, upon congratulating the meeting on the interest shown and the large attendance, referred to Mr. Swanson's talk with the remark that he seconded every word of it and that he hoped for something out of the future that will prove an emancipator. He further said, "The fact that ours is the only republic that has existed the many years it has, due to its self-government, should appeal to everyone for self-government within the plumbing and heating industries, and the restoration of confidence in each other and in both the manufacturing and jobbing groups would remove the difficulties and work out the problems advantageously to all." Mr. Harvey also urged manufacturers and wholesalers because of the let up in building to go after the business which exists in modernization work.

R. Kennedy Hanson, secretary of the National Pipe and Supplies Association; W. E. McCollum, secretary of the Central Supply Association; George Keenan, Walworth Co., president of the Eastern Supply Association for two years; Herbert Seymour, Crane Co.; A. R. McGonegal, president of the American Society of Sanitary Engineering, and Harry G. Starr, Boston, whose untiring efforts have aided in making possible the institute, were also formally presented by President Maynard.

Business Conditions Reviewed

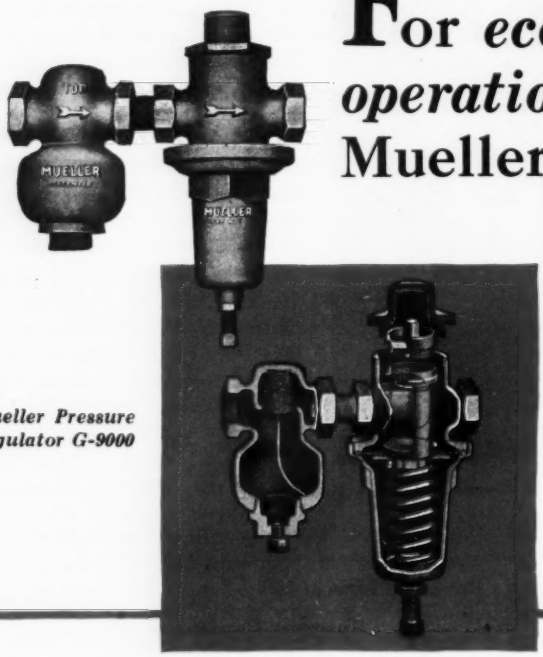
A number of responses were made by wholesalers from the various sections of the country as they were called to the speakers' platform by the president. J. A. Chaplain of John Simmons Co., New York City, expressing his opinion that the wholesaler is coming back into his own, said that 1930 offers a better outlook than any year has in the thirty-five years of his experience in the industry.

Guilford Adams of Samuel Sloan & Co., Rochester, N. Y., for western New York said that January was the slowest in the history of his company and business last year was off 25 per cent over the preceding twelve months. As a redeeming feature of business in that area, he drew attention to the handling of credits which offers contractors 2 per cent in ten days and puts them on a cash basis when thirty days in arrears. Mr. Adams advocated the installment plan of merchandising as a means of increasing sales profitably and said that business generally should be better after April.

Fred Allison of Braman, Dow & Co., Boston, said that while the average sales in his territory during January were about 4 per cent under those for that period in 1929, those going after business were well rewarded. He cited instances of under selling on standard items, the bad shape credits are in, and numerous recent failures among contractors. Better business is looked for, he added, with the advent of a Credit Research Bureau, the establishment of which is under way.

Walter C. Moriarity of Pierce, Butler & Pierce Mfg. Corp. branch at Worcester, Mass., reporting for the central section of Massachusetts, indicated that profits last year were fair in face of a lighter volume which affected both small and industrial types of construction with little to look forward to in the way of an increase during the present year. He also said that through a credit association, which is 100 per cent co-operative, the high losses through bad accounts have been reduced

For *economy* and *improved operation* install this Mueller Pressure Regulator



Mueller Pressure Regulator G-9000

This one fitting will perhaps do more for the success of a plumbing installation than anything else you could recommend. It prevents water waste by controlling the flow, eliminates water hammer by reducing this pressure, stops the annoyance of faucet splashing while assuring full volume at fixtures, prolongs the life of the entire system and minimizes repairs. The Mueller G-9000 Pressure Regulator can be depended on for positive control and safe operation. Write for complete details—today.

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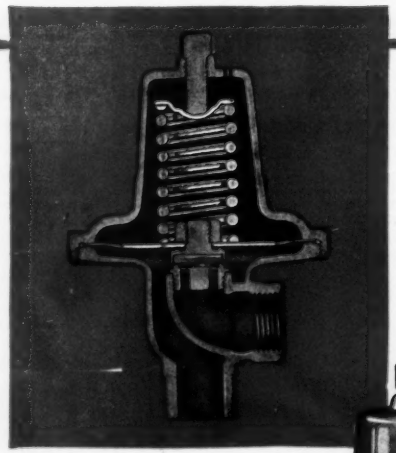
Relief Valves that protect life and property

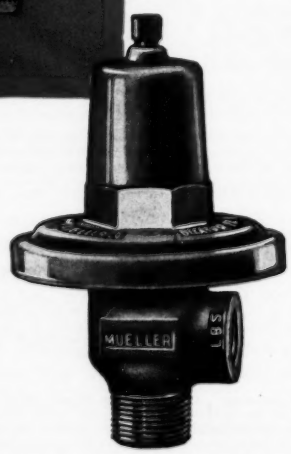


Mueller Diaphragm-Operated Water Relief Valve G-9155

The danger of explosions from high pressure created by excessive temperatures in water lines is eliminated with the use of Mueller Diaphragm-Operated Water Relief Valves. Set at a pressure below that of the fixture guarantee, they protect range boilers, water fountains and domestic hot water systems which are otherwise subject to weakening and leaks from high pressure.

Conforms to the A. S. M. E. Boiler Construction Code and approved by the Underwriters.

These valves are made to Mueller standards of quality and accuracy—famous since 1857. Their cost is indeed low compared to the safety provided. Write for complete information.



MUELLER CO. (Established 1857), Decatur, Illinois; *Branches:* Dallas; Atlanta; New York; San Francisco; Los Angeles. *Canadian Factory:* MUELLER, Limited, Sarnia.

to a minimum and the rehabilitation of houses seems to offer the best possibilities for business.

B. H. Kincaid of Wellington-Kincaid Co., Bridgeport, Conn., reported business gains in some sections of the state and losses in others last year and said that while business now is generally quiet it is felt that with mortgage money again available there will be more interest shown in the spring.

Walter Walls of Walls, Owen & Stambach Co., Philadelphia, gave the meeting to understand that conditions in that section are far from satisfactory, as business in January was the lowest it has been since 1921, with less than $3,000,000 expended on construction and all wholesalers trying to do a larger volume than they did when business was better. Lauding M. E. Robinson, manager of the Philadelphia branch of Crane Co., and J. Harvey Borton of Hajoca Corp., also of that city, for the gratifying results that are being felt through their efforts to better conditions, Mr. Walls suggested that further help in this direction could be had if more manufacturers would indicate that they have faith in their products by establishing minimum resale prices.

Clarence F. Harvey

E. G. Carpenter of Careva Co., York, Pa., felt that the lack of mortgage money and the fact that the central area of his state is overbuilt, has led to the slump business has taken. Credit conditions, he said, are detrimental to good business.

Reports for South East Territory

L. U. Noland of Noland Co., Newport News, Va., including the territory from Washington, D. C., to Alabama in his report, said that sales volumes on an average were 11 per cent off last year from 1928. Despite this, he continued, by like comparison a greater percentage of profit was made in 1929. Factors which are aiding better business in the southern territory, Mr. Noland said, are educational work along merchandising lines which is being furthered by manufacturers, wholesalers and plumbing and heating contractors, also the partial payment plan of selling. In conclusion he paid tribute to the late John A. Quinn, president of the National Association of Master Plumbers, with a few remarks concerning his accomplishments.

Business conditions, both for the present and the future, were presented by manufacturers of some of the major commodities. Among these was E. A. Eckhouse, president of Central Brass Co., Cleveland, who in reporting on cast brass goods said that buying is of the small quantities order but in a fairly good volume, which, however, is below that of last year, and jobbers are not carrying adequate stocks. He pointed out that purchases made by jobbers for parcel post delivery increases the dollar value of goods from 8 to 10 per cent over freight shipment. In connection with the copper market he stated it is likely to remain at 18 cents and firm brass goods prices are in prospect.

J. F. Mattimore, vice president of Walworth Co., Boston, discussing fittings, said that generally buying interest last year was good, but that in December a recession set in which ran over into January, and while at the outset the industry started off on the wrong foot, the correcting solution can be found in the National Plumbing and Heating Institute.

George Herth, vice president and general sales manager of Standard Sanitary Mfg. Co., Pittsburgh, in his message said: "The master plumber is a vital part of our business and should be aided in making an adequate profit through the sales organizations of the manufacturers." "Last year," he continued, "because of the inception of the National Plumbing and Heating Institute should be considered one of blessing and if wholesalers recognize their obligations to the manufacturer who is trying to aid the industry, 1930 will be a good year."

Looks to Institute for Stabilization

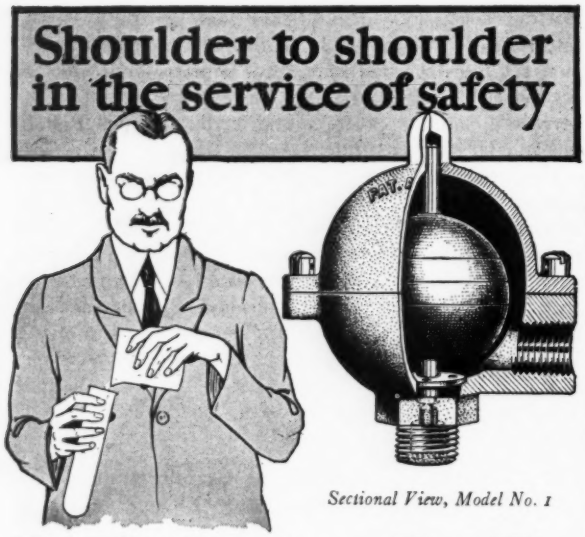
Philip J. Faherty, vice president of Pierce, Butler & Pierce Mfg. Corp., New York City, with respect to the pottery situation stated that last year was a disastrous one for manufacturers, but that the institute is looked to for price stabilization. He pointed to the fact that sales last year on wash-down bowls fell off but sales on high quality pieces increased as a redeeming feature of conditions. He also stated that the average rate of production maintained throughout 1929 of 60 per cent has today fallen to 50 per cent and the stocks of wholesalers in general are low.

William Brecht, president of Hajoca Corp., Philadelphia, delivering a message on conditions surrounding the soil pipe industry, said that foundry operation is at about a 55 per cent rate, despite which a situation better than it has been for some time is prevailing but that some jobbers are evidently trying to disrupt the stability of the market.

W. A. Davis of Youngstown Sheet & Tube Co., Youngstown, Ohio, reading a report prepared by E. P. Corey, who was unable to be present, said 1929 reached a new record of steel production in which merchant pipe shared proportionately, despite the slowing down of demand in November and December. The report also disclosed the information that January and February so far have shown enough improvement to indicate a normal demand can be expected. Suggested minimum resale prices, which manufacturers were forced to name because of price cutting by jobbers, have improved the market, the report concluded.

P. N. Guthrie, Jr., vice president of Reading Iron Co., Reading, Pa., in describing the situation surrounding wrought iron pipe, said 1929 showed but an approximate 1 per cent decline in production and that the minimum resale prices suggested by makers have been beneficial to all concerned. Following the statement that there is a definite place in building for the various kinds of pipe, Mr. Guthrie emphatically said his company will not enter into cut throat competition for business. He also placed significance in the banking action that reduced the rediscount rate to 4 per cent.

R. C. Cook, vice president of Thatcher Co., Newark, N. J., in his version of business where boilers and radiators are concerned, stated that 1929 started out well but ended disastrously and recovery from that slump is



Sectional View, Model No. 1

Red Liquids... and Red Tops

The research chemist heats a test tube over a pale blue flame, and watches carefully the changes which take place. In his service to science, he is also a servant of human welfare and public safety.

Serving public safety in a different capacity is the Red Top Relief Valve. A Model No. 1 Red Top installed in a domestic hot water supply system, protects against explosions and other ruptures caused by skyrocketing pressures.

Red Top is simple in construction and operation, working automatically on the gravity principle, relieving at 50, 75, 100 and 130 lbs., as set.

So reliable is its operation that it bears the approval of the Underwriter's Laboratories, Inc., America's foremost testing organization. So, too, does the Red Top Relief Valve Model No. 2 which relieves at 30 lbs., and forms the basis of an efficient and economical pressure system of hot water heating.

NEPTUNE METER COMPANY
50 E. 42nd Street New York City, N. Y.
Branch Offices in Principal Cities

Red Top
Relief Valve

NEPTUNE METER CO. D.E. 2-22-30
50 East 42nd Street, New York, N. Y.

Please send me a copy of the new edition of your folder, "Protection," which describes Red Top Relief Valves and their operation.

Name.....
Street.....
City.....
State.....

not expected at least until the last half of this year. Mr. Cook asked that every jobber support the principles of the Boiler and Radiator Institute.

A number of applications for membership in the association were accepted by action of the meeting. Included in these firms were the following: American Tube Works, Boston, Mass.; Armstrong Mfg. Co., Bridgeport, Conn.; Bennett Co., Somerville, Mass.; John Douglas Co., Cincinnati, O.; Englewood Plumbing Supply Co., Englewood, N. J.; General Fittings Co., Providence, R. I.; Hutchinson, Inc., Matawan, N. J.; M. Lehman & Son Co., Brooklyn, N. Y.; Ral Plumbing Supply Co., Passaic, N. J.; Rhode Island Fittings Co., Providence, R. I.; Semler Co., Jeannette, Pa.; Sloan Valve Co., Chicago, Ill.; Smith & Wesson Co., Springfield, Mass.

The H. C. Atkins Mfg. Co., St. Louis, and the Pen-Yo Plumbing Supply Co., Buffalo, withdrew memberships because of dissolution of business.

Secretary Hanley, reporting briefly on the work of the association's credit bureau, indicated that inclusive of January there has been a total of 19,330 claims reported, involving $3,320,024, of which $2,569,526 have been paid. He urged that past due accounts be reported to his office so that an effort at settlement may be made.

During the meeting, President Maynard referred repeatedly to the national convention of the Master Plumbers' Association which is to be held in Boston in June, urging manufacturers to make exhibit space reservations, declaring that practically 50 per cent has already been taken. The president also drew attention to the plans that are completed for advertising the exhibition, which are calculated to draw the public from all parts of New England, through newspapers, the radio, and a million pieces of literature to be distributed. He also thanked former President Messer, Washington, D. C. for a floral tribute.

◆

New York Salesmen Plan Party

The New York Chapter of the National Association of Plumbing and Heating Salesmen is planning a dinner dance for March 1 in the Rose room of the McAlpin hotel, New York City. Elaborate arrangements for the affair are being made by Harry LaCroix of Pittsburg Water Heater Sales & Service Co., Brooklyn, N. Y., who is chairman of the committee, and John A. Hurley, credit manager of Pierce, Butler & Pierce Mfg. Corp., New York City, together with F. L. Dodson, of Malleable Iron Fittings Co., Branford, Conn.

◆

Western Trade Golf Association Elects Officers

The Western Trade Golf Association of Chicago held its annual meeting at the Hamilton Club on February 15. Officers elected for the 1930 season were J. A. Cutler, Johnson Service Co., president; J. J. O'Shea, American Heating & Plumbing Corp., vice president; W. V. Hoier, William V. Hoier Co., treasurer; M. G. Henderson, A. M. Byers Co., captain; J. H. Milliken, Reed Air Filter Co., handicapper; C. E. Price, "Engineering Publications, Inc.," secretary. Directors named were all past presidents of the association, and consist of J. H. O'Brien, T. H. Monaghan, F. B. Hackett, C. E. Beery, H. W. Evans, E. W. Sanborn, C. R. Elliott and A. S. Lindeblad.

Philadelphia Wholesalers Discuss Credit Abuses

A committee of the Quaker City Plumbing Jobbers' Association, Philadelphia, Pa., met with a similar group from the Philadelphia Jobbers' Association in January at the Manufacturers' club, for a discussion of existing trade abuses and to devise a co-operative method for removing them. J. Harvey Borton, chairman of the board of Hajoca Corp., Philadelphia, presided at the meeting and introduced Harold Mitchell of C. L. Weber & Co., Philadelphia, who spoke on credit abuses.

The Quaker City Plumbing Jobbers' Association was organized several months ago for the purpose of regulating credit practices. Officers of the organization have been elected as follows: David Shrull, president; Benjamin J. Landis, vice president; Harry Johnson, treasurer; H. R. Kuehner, secretary. Mr. Kuehner was the organizer of the group.

◆

Metropolitan Trade Golfers Elect Officers

Meeting at the Yale club, New York City, on January 30, the Metropolitan Trade Golf Association of that city, elected T. A. Johnson of J. D. Johnson Co., Inc., president; Thomas Larkin of Nason Mfg. Co., vice president; C. G. Wall of Sloan Valve Co., secretary treasurer, and P. C. Platt, also of Sloan Valve Co., captain. Mr. Platt was host at the dinner, which was attended by twenty-eight members of the association.

At the conclusion of discussions relative to the number of prizes to be distributed at each meet, it was decided to continue the plan of last year and retain the number at twelve, rather than reduce it to eight. In response to a request from President F. W. Broatch, who resigned as New York manager of the United States Sanitary Mfg. Co., Pittsburgh, Pa., to take a trip around the world, and who presided, fifteen members responded with offers of the leading Metropolitan Clubs. Decisions of choice were reserved until a later date.

◆

New Jersey Salesmen Meet

The New Jersey Chapter No. 1 of the National Association of Plumbing and Heating Salesmen meeting on February 7 at Toni's restaurant, Newark, N. J., passed an amendment to its constitution making the annual dues, payable at the June meeting, $8 instead of $10 beginning with the fiscal year in June. Edward M. Robinson, president, appointed Irving Wendling and Ray Condit as a committee to draw up an amendment making it mandatory to suspend all members whose dues are not paid by December. This measure is to be taken in order to avoid paying per capita dues to the national body which are payable in January on members who have not paid.

A motion to send a letter of condolence to Mrs. C. J. Soleau, whose husband, a heating contractor in Montclair, N. J., died on February 7, also carried. A sickness and distress committee was formed with F. J. Meyer, chairman; Sidney Waller and Edward Colley to serve. In addition to the usual reports a number of general discussions concerning the welfare of the organization were heard.

What did he get for $4.98?

THIS is a story of a heating contractor who spent $4.98 on a 10 radiator hot water job and then found out that he hadn't spent anything extra after all. Instead of installing ordinary radiator valves he bought Arco Packless No. 901 and paid $4.98 more than the specification called for. Because there was no cost for a return trip to repack the ordinary valves his $4.98 wasn't an expense at all. At the same price you'd use an Arco Packless Valve every time, and this experience shows why it costs you no more.

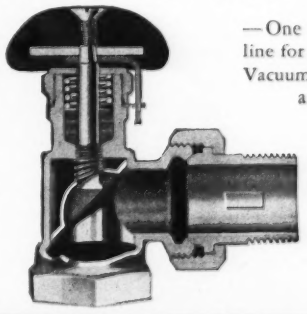
No. 901 Arco Packless Valves have these 3 big advantages:

1. Packless—complete protection against leaks without repacking.

2. Swinging plate—acts as a cleaning tool, impossible for the valve to stick.

3. Equalizing—adjustable stop, makes it possible to balance the job after installation without expensive pipe changes.

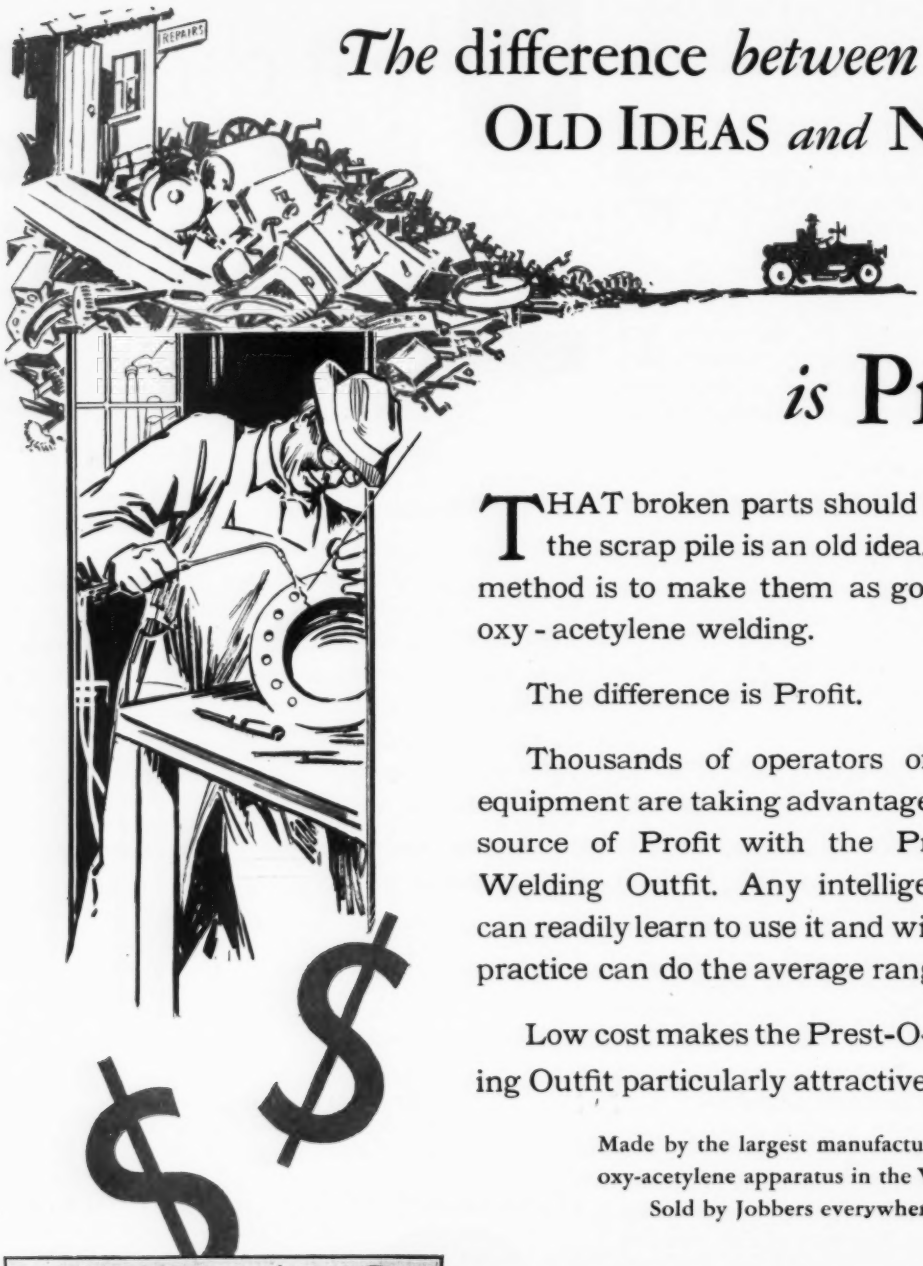
STANDARDIZE ON NO. 901 ARCO PACKLESS



—One of a complete Packless line for Steam, Water, Vapor or Vacuum, made in Angle, Corner and Gate patterns.

AMERICAN RADIATOR COMPANY

Makers of a complete line of guaranteed heating accessories



The difference *between* OLD IDEAS *and* NEW . . . *is* Profit!

THAT broken parts should be thrown on the scrap pile is an old idea. The modern method is to make them as good as new by oxy-acetylene welding.

The difference is Profit.

Thousands of operators of mechanical equipment are taking advantage of this added source of Profit with the Prest-O-Weld Welding Outfit. Any intelligent workman can readily learn to use it and with reasonable practice can do the average range of welding.

Low cost makes the Prest-O-Weld Welding Outfit particularly attractive.

Made by the largest manufacturers of oxy-acetylene apparatus in the World.
Sold by Jobbers everywhere.

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PREST-O-WELD

THE TRADE NEWS

News of Plumbing and Heating Contractors

H. & P. Contractors to Hold Convention in New York City

A decision to hold its annual convention in New York City June 16 to 19, inclusive, was reached at a meeting of the board of directors of the Heating and Piping Contractors' National Association held February 3 and 4 in the executive offices, New York City. The meeting place was not chosen, but it developed in the board meeting that the keynote of the convention will be a far-reaching program of trade promotion which involves the preparation and constant revision of the "Local Association Secretary's Manual"; conferences with local association secretaries on industry educational programs; the establishment and maintenance of close working relationships with standing committees of the National Association whose functions are concerned with any phase of the work of the educational department; the establishment and maintenance of contacts with the federal board for vocational education, state boards for vocational education, local vocational directors, and teacher training agencies; the establishment and maintenance of contacts with other industry organizations; the establishment and maintenance of desirable relationships with the industry trade press; and the establishment and maintenance of contacts and working relationships with manufacturers in the industry whose interests will be served by educational service, and whose support will strengthen the association program.

Each feature has been comprehensively worked out and provision made for constant expansion and revision.

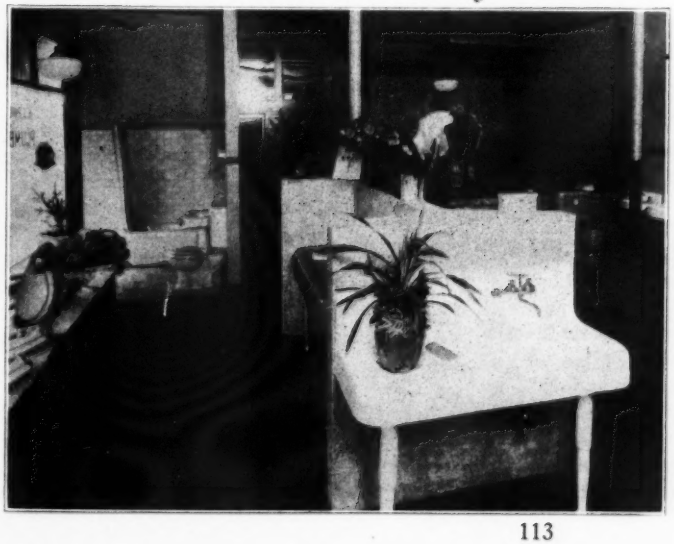
Those in attendance at the board meeting were President Walter Klie of Cleveland, who presided; Vice President Frank W. Howard of Boston; Treasurer Robert D. Williams of New York City; J. Lawrence De Neille of St. Louis; Harry M. Hart of Chicago; John S. Jung of Milwaukee; Justin A. Kiesling of Houston, Tex.; Ray L. Spitzley of Detroit; John H. Zink of Baltimore; Secretary Henry B. Gombers and Assistant Secretary Joseph C. Fitts, both of New York City.

◆

New Jersey Convention to be Held in May

The New Jersey State Association of Master Plumbers has decided to hold its next annual convention in New Brunswick, N. J., on Tuesday and Wednesday, May 13 and 14, 1930, at the Woodrow Wilson hotel, according to an announcement made by State Secretary William T. J. Orriss of Union City.

Well-Appointed Display Room in Chicago



THIS showroom was opened recently by H. J. Phillips at 234 West 69th street, Chicago, Ill. Mr. Phillips displays a handsome selection of colored as well as plain fixtures, which he has arranged so that they show to the best advantage.

National Contractors' Committee on Standards Meets in Philadelphia

Meeting at the Benjamin Franklin hotel, Philadelphia, Pa., on January 28, the committee on standardization of the Heating and Piping Contractors National Association adopted the transmission constants that were computed by the American Society of Heating and Ventilating Engineers, and checked by investigations in its research laboratory at Pittsburgh. This action injects about twice as many constants into the tables as are given at present and provides that they will appear as carried out three decimal places instead of two.

The committee spent a great deal of its time studying hot water pipe sizes and in conferring with Prof. Elmer Smith of the Texas Agricultural & Mechanical College, who did considerable research at that institution. Other subjects discussed, involved the dimensional standards that are being worked out by the American Society of Mechanical Engineers and the Manufacturers' Standard Society of the valves and fittings industry. Plans for enlarging its engineering standards were also discussed.

Ralph S. Franklin, Boston, Mass., chairman of the committee, presided. All members of the group, comprising William W. Hubbard and R. A. Wolff, both of New York City; W. R. Rhoton, Cleveland, Ohio, and Charles G. Lamb, Chicago, Ill., were present. Joseph C. Fitts, assistant secretary of the association, was secretary of the conference.

◆

Establishes General Office in Chicago

The following statement has been received from the Wells-Newton National Corp., contractors and engineers:

"The general office of the Wells-Newton National Corp. is now established at 100 West Monroe street, Chicago.

"This central location was decided upon after careful consideration by the board of directors, as it will facilitate handling of affairs of the company, of national scope, to a much greater advantage.

"The executive committee of the corporation, comprising numerous prominent men of the industry, will in the future hold its meetings in Chicago and continue the work of perfecting the policy.

(Signed) ANDREW NILSON,
President."

◆

Twin City Heating Men Meet

On Wednesday, February 5, the heating and piping contractors of St. Paul and Minneapolis held a joint luncheon meeting in the St. Paul Athletic Club, taking advantage of the fact that the state plumbing association was meeting in that city.

Clarence McGeary, president of the St. Paul group, presided, V. L. Peavy, manager of the two associations, introduced the following visitors: Louis Friend and Jacob Schuh of Milwaukee, H. C. Bergrud and R. O. Bartingale of Eau Claire, Wis. H. Merwin Porter of Minneapolis, a past director of the plumbers' national association, and H. C. Ridler, vice president of the Minneapolis group of plumbers, spoke briefly.

Russell G. Creviston, sales promotion manager of Crane Co., was the speaker of the day. The Heating and Piping Contractors National Association is distinguished, he said, as being a research agency, attempting by studies to keep ahead of the membership and give it service, and by reason of its constructive merchandising policy in launching the certified heating campaign. "Defensive tactics," he said, "are things of the past. The association today must have an aggressive merchandising policy."

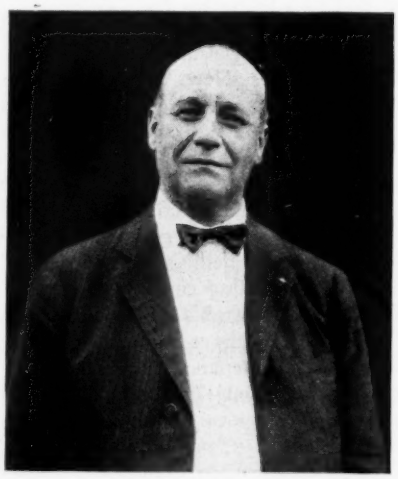
Announces President's Plans

The following message has just been sent to all members of the National Association of Master Plumbers by Secretary Feeney.

Dear Member:

The death of our late National President John A. Quinn has made it necessary, in accordance with the by-laws of the National Association, for Vice President Drake to assume the duties of president.

He desires to announce that no changes will be made in the personnel of the officers and directors, nor in the committees appointed by his predecessor, and that the National Headquarters will remain as at present at 1321 Arch street, Philadelphia, Pa.



George H. Drake

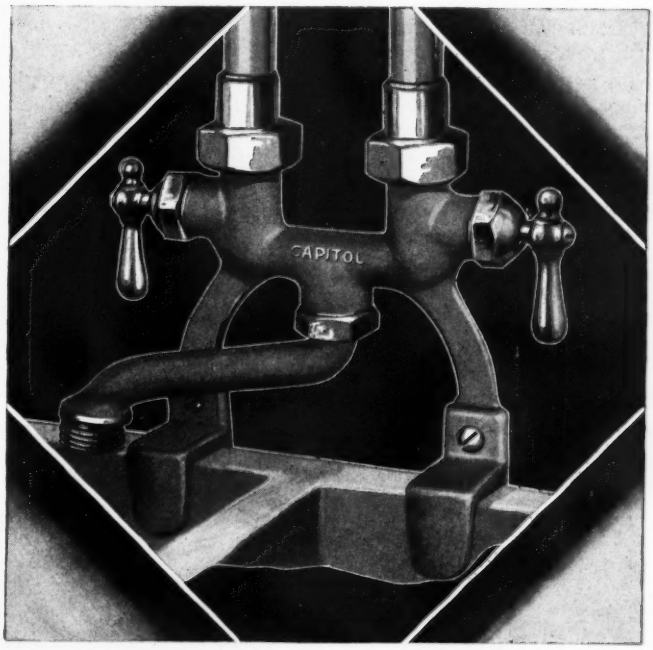
As Acting President, it will be his purpose as far as possible, to carry out the progressive and constructive plans and policies inaugurated by President Quinn and continue the many activities undertaken by him for the welfare of our industry.

It is his intention to visit the National Office frequently and keep in constant communication with its affairs by wire and telephone.

I trust that every officer and member of the National Association will give him the same wholehearted support and co-operation as was accorded President Quinn during his brief administration.

Very truly yours,
Maney J. Feeney,
National Secretary.

A Money Saving LAUNDRY INSTALLATION!



ONE of the outstanding features of this Capitol laundry swing faucet is the adjustable brackets by which it is attached to the tubs. These are reversible so that no matter how the tubs may be placed they will fit promptly into place.

Another feature is that water pipes enter straight into the fixture, without the need of tees or ells or other special fitting—a big time-saving factor which means longer profits.

Other points of superiority are its strength of construction, compactness, trim appearance and ease of operation. Write for prices and other information.

Bohn Aluminum & Brass Corporation

CAPITOL BRASS DIVISION

MANUFACTURERS OF BRASS VALVES, BOILER TRIMMINGS AND PLUMBERS' BRASS GOODS

DETROIT~MICHIGAN

Wisconsin Association Retains Part-Time Counsel

The Wisconsin Master Plumbers' Association has obtained the part-time services of Carl Marsh of the Heating and Piping Contractors Milwaukee Association. Mr. Marsh will act as part-time counsel for the Wisconsin Master Plumbers' Association, addressing meetings in Milwaukee and throughout the state in the interest of better bookkeeping systems. He will continue to head the Milwaukee office of the Heating and Piping Contractors Association.

Mr. Marsh was formerly at Madison, Wis., and also with the Plumbing and Heating Industries' Bureau on the Pacific Coast. The announcement of his connection with the Wisconsin association was made by Lewis R. Friend, president.

◆

Albany Contractors Meet With Manufacturers

An entertainment for the master plumbers and heating contractors in the vicinity of Albany, N. Y., was recently given jointly by the Youngstown Sheet & Tube Co., Youngstown, O., and Hay & Co., Inc., of that city, in the showroom of the latter concern. John E. Dugan, past secretary of the National Association of Master Plumbers, spoke on organization work. John H. Doerr, executive manager of the Heating and Piping Contractors Albany Association, gave an explanatory talk on certified heating. Entertainment was offered in the form of several reels of motion pictures which included the manufacture of steel pipe, a comedy reel and others of members of the trade. A buffet supper was served to conclude the evening.

Southern California Federation Holds Business Meeting

The Federation of Merchant Plumbers' Associations of Southern California recently held a meeting at El Centro, Calif., with an attendance of over 200 members of the plumbing and heating industry, including manufacturers, wholesalers and contractors. D. D. Updegraff of Crane Co., Chicago, and John Hokom, plumbing and heating contractor of Los Angeles, were the speakers of the evening. Much interest was expressed by all who were present.

At the business meeting of the organization, held during the afternoon preceding the evening session, a constitution and by-laws for the federation were adopted.

◆

Philadelphia Master Plumbers' Association Holds February Meeting

The monthly meeting of the Master Plumbers' Association of Philadelphia, Pa., held February 6 in the association rooms, presided over by M. J. Feeney, president, was devoted almost entirely to eulogies of the late John A. Quinn, president of the national organization, who died January 24 at his home, in that city. In addition to President Feeney, who told of the efforts put forth to save the late president, National Director Wilbur R. Dosher, Wilmington, N. C., and Harry L. Righter, Germantown, Pa., each added his expression of sorrow.

Past National President D. J. Durkin, Jr., in speaking on business laws and their application, pointed out a number of ideals of business dealing and pitfalls to be

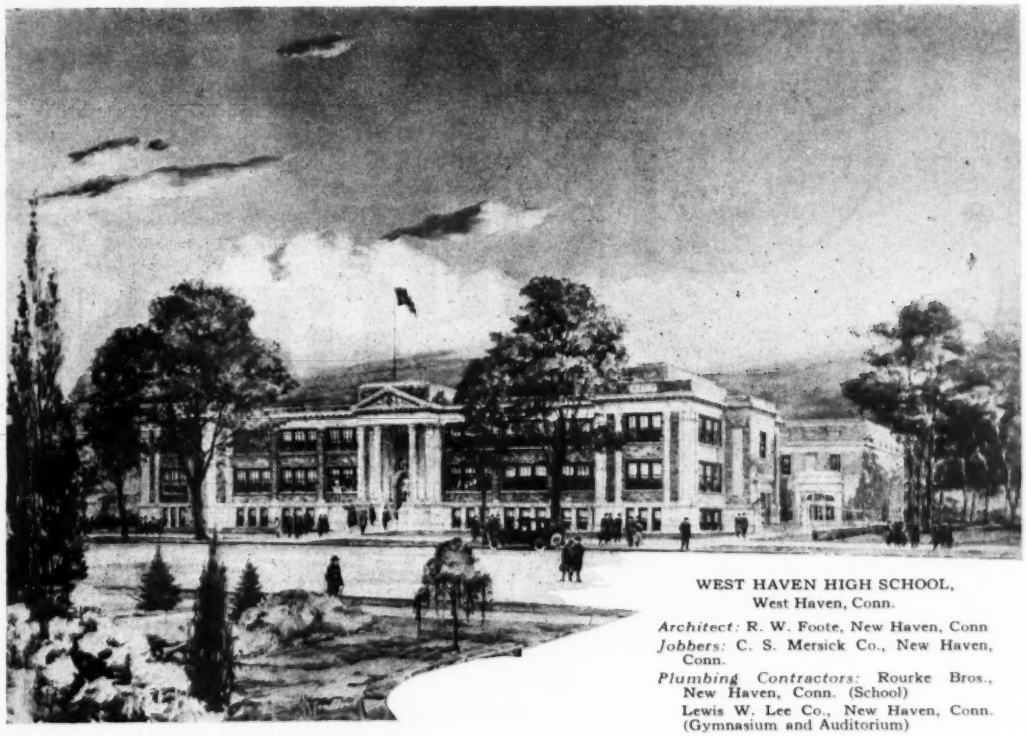
PHOENIX BRASS FITTINGS

Satisfactory performance on all kinds of jobs is made evident by the ever increasing installation of P. B. F's.

Made of Red Metal
Every piece air tested under water

PHOENIX BRASS FITTINGS CORP., IRVINGTON, NEW JERSEY

SIMPLEX FLUSH VALVES



WEST HAVEN HIGH SCHOOL,
West Haven, Conn.

Architect: R. W. Foote, New Haven, Conn
Jobbers: C. S. Mersick Co., New Haven, Conn.
Plumbing Contractors: Rourke Bros., New Haven, Conn. (School)
Lewis W. Lee Co., New Haven, Conn. (Gymnasium and Auditorium)

Wherever the importance of advanced quality and additional safety and service are noted over mere price competition, it is becoming the custom to select Simplex Flush Valves. That is why Simplex Flush Valves were installed in the West Haven High School.

Due to the four-way by-pass arrangement they may be easily adjusted from the OUTSIDE.

Their record of service is their most outstanding feature and your investigation will enable you to see for yourself their superiority.

Write us for full details

The BEATON & CADWELL MFG. CO.

Established 1894

NEW BRITAIN, CONN.

GALVANIZING

M·I·F FITTINGS

The M. I. F. Company adopts the best galvanizing process known. The common or basket method is never employed in the M. I. F. Plants.

An individual spool is used for each fitting, which gives a uniform coating, and permits the excess zinc bath to be thrown off so that it will not interfere with the threading operation. The short-cut method of basket dipping commonly employed accounts for poor alignment of threads as the uneven zinc coating will not permit proper chucking in the threading machines.

MALLEABLE IRON FITTINGS CO.
BRANFORD, CONN.

MECHANICAL O.K. + INSPECTION OK. MIF + FINISH OK. + STANDARD

avoided. Howard S. Thrasher, business manager of the Philadelphia Plumbing and Heating Development League, urged the master plumbers to indicate their intentions of financial support of the league, as that from manufacturers and wholesalers is contingent on the degree in which contributions are forthcoming.

A letter was read by Secretary Robert H. Pflug-Felder from Acting President George H. Drake, Buffalo, N. Y., accepting the duties of president and indicating that the national offices will remain at 1321 Arch street, Philadelphia. A steamship company representative offered a proposed trip by boat from Philadelphia to Boston for the national convention in June. The steamship sails from Philadelphia at 5 p. m. the preceding Saturday, leaving Boston Thursday night, June 26, arriving in Philadelphia the following Saturday noon.

A motion picture showing the development of the telephone concluded the meeting.

◆

California Inspectors Elect Officers

The Plumbing Inspectors Association of California has recently elected the following officers for 1930: J. B. Davis of Pasadena, president; G. R. Hilliker of Fresno, vice president, Northern Division; O. L. Casiday, Pomona, vice president, Southern Division, and Stephen I. Smoot, Los Angeles, secretary-treasurer.

The executive committee of the Southern Division is composed of Charles B. Bailey of Los Angeles; R. M. Clapp, Alhambra; Joseph T. Curley, Long Beach; E. T. Woods, San Marino, and Clifford Wykoff of Glendale. The committee for the Northern Division has not been elected yet.

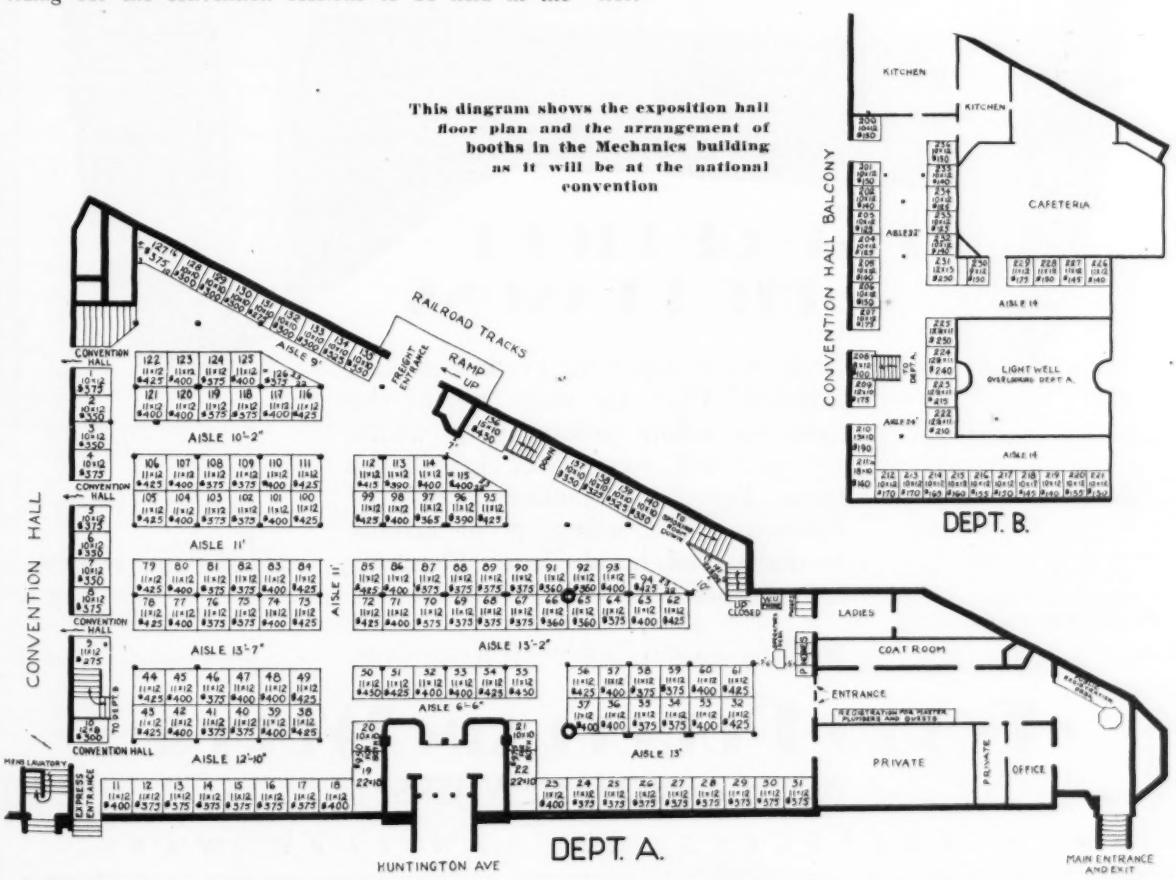
Reveal Exposition Plans of National Plumbers' Convention

P. W. Donoghue, chairman of the convention and exposition committee for the coming convention of the National Association of Master Plumbers, to be held at Boston on June 23-27, has sent the prospectus for the 1930 exposition to 500 manufacturers, the bulletin containing complete exposition information.

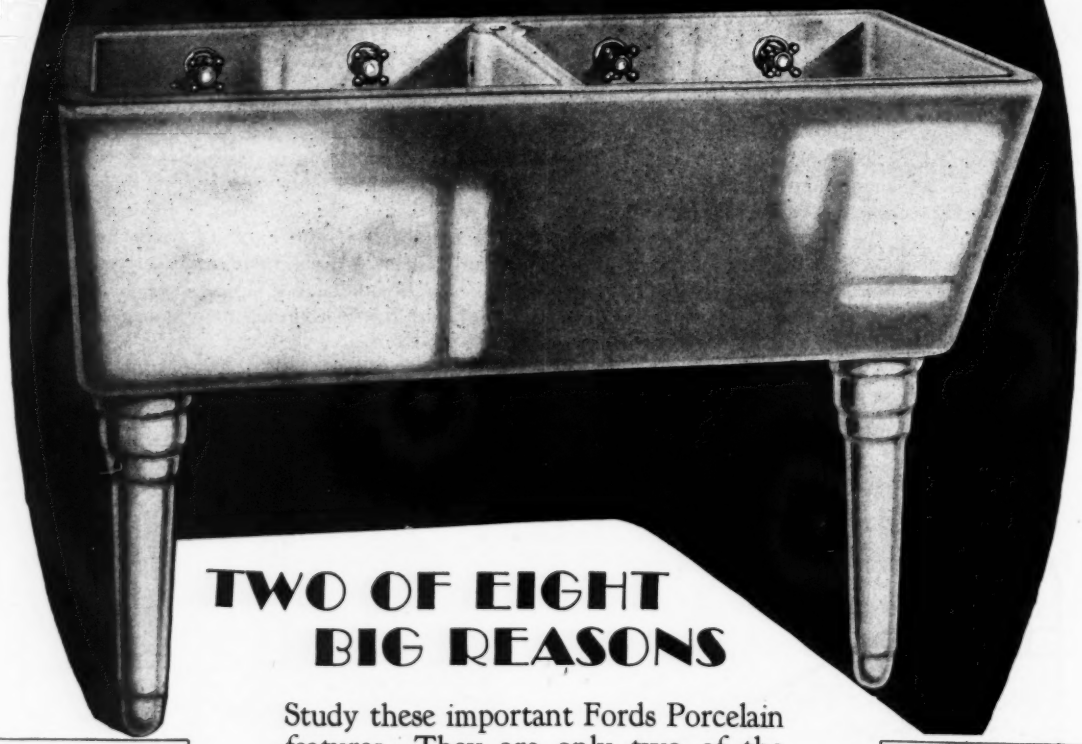
The prospectus, as the accompanying illustration shows, reveals that there will be more booths than usual this year in the exposition hall and that the rates per square foot are lower than for many years past. In providing for the convention sessions to be held in the Grand hall on the same floor as the exposition hall and having the entrance arranged so that all master plumbers attending the convention will pass through the exposition, going to and from the sessions, the committee has endeavored to make sure that the exhibits will receive attention.

The members of the exhibits committee, of which Andrew F. Curtin is chairman, are exerting every effort to make the Boston show a signal success from the viewpoint of both the visiting master plumber and the exhibitor.

This diagram shows the exposition hall floor plan and the arrangement of booths in the Mechanics building as it will be at the national convention



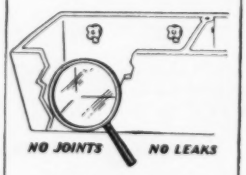
Fords
PORCELAIN TRAYS



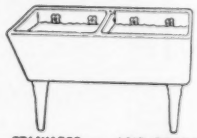
TWO OF EIGHT BIG REASONS

Study these important Fords Porcelain features. They are only two of the eight big selling points about which we will tell you. They help make Fords Porcelain Laundry Trays the distinctive, fast selling, profit making products that hundreds of Plumbing Contractors swear by.

Watch for the other Fords proofs of superiority.



MADE IN ONE PIECE
NO CREVICES TO CATCH DIRT



STRONG CLEANSERS MAY BE SAFELY USED

FORDS PORCELAIN WORKS
PERTH AMBOY, NEW JERSEY

MANUFACTURERS OF SANITARY WARE

Plan Banquet for March 3

The Master Plumbers' Association of Montclair, Bloomfield, Verona and Vicinity has selected March 3 for its annual banquet and ladies' night. The affair is to be held at the Aiello hall, Montclair, N. J., and William Chesnut, past president of the New Jersey state association, is chairman of the committee making the arrangements.

◆

Buffalo Masters Hear Talk on Brass Goods

Both master plumbers and journeymen at Buffalo, N. Y., on January 24 heard an interesting talk on the manufacture of tubular brass goods, given by Cecil R. Welte, representative of J. B. Wise, Inc., Watertown, N. Y., in the show room of the Salzman Sanitary Co., Buffalo. George Salzman, president of the latter concern, was host and, despite the blizzard which was in progress, over fifty guests were present, among them E. W. Wise, treasurer, and W. M. Thompson, sales manager of J. B. Wise, Inc.

◆

Jersey City Masters to Hold Annual Banquet

The Master Plumbers' Association of Jersey City, N. J., has arranged to hold its annual banquet on February 27 at the Masonic club, that city. Louis S. Komoski is chairman of the committee making the preparations.

◆

Rahway, N. J., Association Holds Banquet

The Master Plumbers' Association of Rahway, N. J., held its first annual banquet and dance on February 15 at the Riverview Tea Room, that city. Arthur J. Murphy, secretary, was in charge of the arrangements.

◆

Hold Dinner-Dance at Rochelle Park, N. J.

The Plumbing, Heating and Factory Supply Men's Credit Association of Northern New Jersey held its first annual dinner-dance, January 25, at the Swiss Chalet, Rochelle Park, N. J. It proved to be an outstanding success. There were approximately three hundred guests present to enjoy a delightful dinner and the dancing which followed. The committee—Joseph Seel, chairman; S. Van Dusen and C. R. Morris—had provided entertainers whose performance during the dinner was enjoyed. The officers of the organization are: Carl A. Boeker, president; Morris Jaffe, vice president; Starr Van Dusen, treasurer, and Harry F. Demarest, secretary.

◆

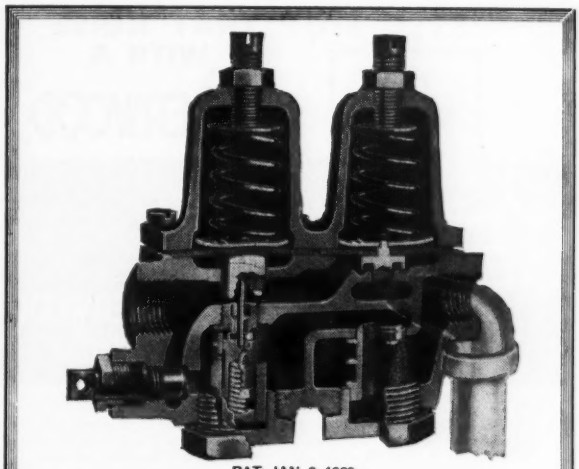
Moline President Goes to Florida

J. V. Lockhart, president of the Moline Master Plumbers Bureau, Moline, Ill., with Mrs. Lockhart, left recently via automobile for Miami, Florida. Mr. and Mrs. Lockhart have made this same trip at this season for a number of years.

◆

Syracuse Association Elects Officers

The Syracuse Master Plumbers Association of Syracuse, N. Y., has elected the following members to serve on the official staff for the year 1930: Arthur VanDenburgh, president; Harold Halliday, vice president; James F. Guider, secretary; and Walter Coling, treasurer.



If You Want These 5 Points, You've Got to Buy CASH ACME

1. Simplicity of design making for easy service.
2. Dual strainer protection preventing dirt from entering and damaging the working unit.
3. The by-pass feature that allows quick filling and protects the regulator seat.
4. The sensitivity and long life of rubber diaphragms.
5. Quality throughout with no thought of cutting corners in either material or workmanship to meet a price—rather to build the best control for the job that can be built.

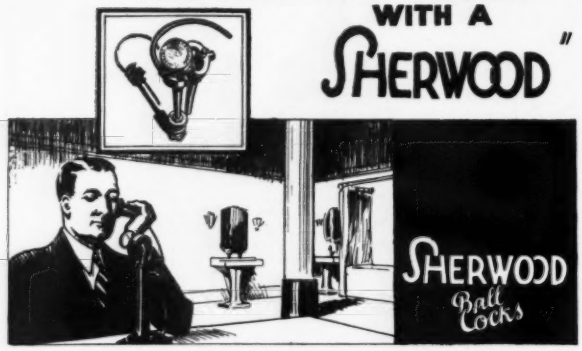
On your next hot water job try a CASH ACME Control and obtain profits that stay put.

A. W. CASH VALVE MFG. CORP.
616 N. Water St. Decatur, Illinois

Sales Agents: Chas. H. Fiske, 431 So. Dearborn St., Chicago, Ill. Telephone Harrison 4968.
Eastern Sales Agents: H. M. Flemming Co., 30 Church St., New York City, N. Y. Telephone Cortlandt 1553.

CASH ACME
IT'S AUTOMATIC

"I'LL STOP THAT NOISE WITH A SHERWOOD"



"The tank in my bathroom is constantly whistling and gurgling. It is always dripping and leaking. Can you do anything about it?"

When a customer makes that sort of inquiry, the safe reply for you to make is, "I'll stop that noise and that leak with a Sherwood Ball Cock."

It's safe because Sherwood is guaranteed to close against any city water pressure without whistling, gurgling or leaking.

Every bathroom, old and new, deserves a Sherwood Ball Cock. And here's an interesting fact:

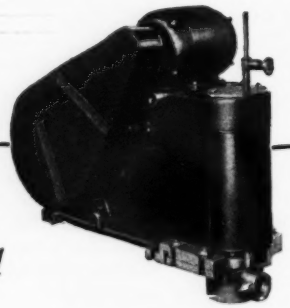
When you install a Sherwood Ball Cock in an old bathroom, it stands as a sample of the work you do. Its wonderful performance will often be the means of opening up big leads for complete bathroom remodelling.

Sherwoods are furnished with any length shank desired. They are always readily available thru your jobber.

Try a Sherwood for your next job. You'll know why it is "standard" with hundreds of plumbers everywhere, when you do.

Mark it down, now, to order a Sherwood Ball Cock.

SHERWOOD BRASS WORKS
Jefferson and Mt. Elliott Aves. DETROIT, MICH.
REPRESENTATIVES
J. A. Riordan Co., Inc., 1600 E. 7th St., Los Angeles; E. S. Thompson, 1401 Chestnut St., Philadelphia
301 Colman Bldg., Seattle; Fred G. Hoffman, 831 Edgewood Ave., Trenton, N. J.
Fred S. Wiley, Plymouth Bldg., Minneapolis



In selling this system, you sell a "salesman"

Every time you sell a well water pumping system, you create a prospect for a complete plumbing installation. If the system is satisfactory in every way the prospect will return to you when he wants his barns and his home piped and equipped.

There is no better way of insuring his return than recommending this Crane-Warlo Deep Well System. Every part of it is made to give enduring, untroubled service. It operates with a simple single stroke. Through gravity its positive, overhead system carries a flood of oil to every pin and bearing. Such efficiency adds years of life to every part. Offered at prices ranging from $150 to $259 this No. 850 will pump 125 to 510 gallons hourly from depths to 250 feet. More than enough water to amply supply kitchen, laundry, bath, barns and garden.

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GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVENUE, CHICAGO
NEW YORK OFFICE: 23 W. 44TH STREET

Branches and Sales Offices in One Hundred and Eighty Cities

Associations Elect Officers

Racine

The Racine Master Plumbers' Association of Racine, Wis., has elected the following members as officers for 1930: Henry Smith, president; Sigmund Solheim, vice president; W. R. Pugh, secretary; and Louis Norup, treasurer.

Arlington

The Master Plumbers Association of Arlington County, Va., has elected the folowing officers for 1930: Stephen E. Childs of Clarendon, president; Robert Vranich, vice president; H. C. Messner, secretary; E. H. Birch, treasurer; and Peter Starke, sergeant-at-arms.

Hamilton

The Hamilton Master Plumbers Association of Hamilton, Ont., recently elected Norman Clark president and W. C. Brittain secretary-treasurer.

Oranges

Werner, trustees.

The Master Plumbers' Association of the Oranges, N. J., has elected the following members as officers for the new year: George H. Brenner, president; George Buggeln, vice president; Joseph Berg, secretary; H. G. Kraus, treasurer; F. F. Bogart, sergeant-at-arms; George Fricke, A. Trapper and G. H.

Springfield

The Springfield Plumbing and Heating Bureau of Springfield, Ill., has elected the following members to serve during the new year: William J. Franz, president; J. A. Van Nattan, vice president; Frank E. Christman, executive secretary; and James T. Power, treasurer.

Orlando

The Master Plumbers' Association of Orlando, Fla., at its first regular meeting of the year, elected Charles F. Riecken of Orlando, president, and Foster R. Fanning of Winter Park, secretary-treasurer.

Connellsville

The Connellsville Master Plumbers Association of Connellsville, Pa., has elected the following members as officers for 1930: Charles F. White, president; J. Cyphers, vice president; R. M. Collins, secretary; and Bernard Welker, treasurer.

Gary

The Gary Society of Sanitary Engineers, Gary, Ind., has elected the following officers for the ensuing year: F. Eibel, president; Albert Brown, vice president; and E. L. Burke, secretary-treasurer.

Portsmouth

The Master Plumbers Association of Portsmouth, Va., has recently elected as its officers for 1930, E. L. Morris, president; J. C. Savage, vice president; and W. L. Bennett, secretary and treasurer.

Davenport

The Associated Plumbers of Davenport, Ia., has elected as its officers for the ensuing year, Harry E. Speth, president; H. R. Wiese, vice president; and Roy P. Kerker, secretary and treasurer.

Los Angeles

The Los Angeles, Calif., Association of Master Plumbers has elected the following officers for 1930: Charles T. Perry, president; C. G. Wilkinson, first vice president; Ralph Kennedy, second vice president; and E. J. Carroll, secretary.

Monroe County

The Monroe County Master Plumbers' and Steam Fitters' Association of East Stroudsburg, Pa., recently elected the following members to serve on the official staff: Joseph Lessig, president; Abraham Smale, vice president; C. F. Van Why, secretary; and H. C. Archibald, treasurer.

Peoria

The Peoria Master Plumbers' Association of Peoria, Ill., recently elected as its president for the ensuing year, Albert M. Schlehuber; while Lee H. Rose was made vice president; F. B. Siefert, secretary; and Theodore Kasjens, treasurer.

Oklahoma City

The Oklahoma City Master Plumbers' Association of Oklahoma City, Okla., recently elected Henry F. Hanson and James J. Cosgrove to the presidency and vice presidency, respectively, of the local association.

The offices of secretary and treasurer have not yet been filled as it is planned to employ a full-time secretary.

Harrisburg

The Harrisburg Association of Master Plumbers of Harrisburg, Pa., recently elected the following members as officers for 1930: F. E. Filson, president; Clarence Runk, vice president; and John H. Miller, secretary-treasurer.

Richmond

The Richmond Master Plumbers' Association of Richmond, Ind., has elected as its officers for the 1930 season, John H. Niewoehner, president; John F. Thorman, vice president; William H. Meerhoff, secretary; and Lewis E. Stanley, treasurer.

Dayton

The Master Plumbers' Association of Dayton, Ohio, has elected the following members as officers for the ensuing year: Harley F. Young, president; William J. Brinck, vice president; Bess K. Deckard, business secretary; and Henry S. Saunders, treasurer.

South Bend

The South Bend Society of Sanitary Engineers, Inc., of South Bend, Ind., has elected Charles M. Oberlin as its president for 1930; Thomas J. McGrath, vice president; J. E. Withers, secretary; F. P. Futter, treasurer.

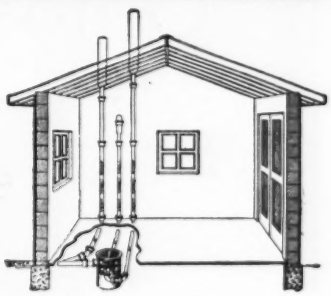
Alton

The Alton Master Plumbers' Association of Alton, Ill., at a recent business meeting, elected the following officers: R. P. Kennedy, president; Thomas J. Fleming, vice president; G. S. Brunner, secretary-treasurer.

Gloucester

The Cape Ann Master Plumbers' Association of Gloucester, Mass., has elected the following officers for the coming year; Elliot W. Tarr, president; Edward M. Law, vice president; George E. Cameron, secretary; and L. W. Thurston, treasurer.

Their life's in your hands



Do Not Let Them Take a Chance

Your customers want *PeerlesS* protection. They don't want to take chances with their health, life and property—and they won't if you sell them *PeerlesS* Garage Drainage Systems.

You'll find your advice will be accepted as a doctor's is when you've got the *PeerlesS* story to tell.

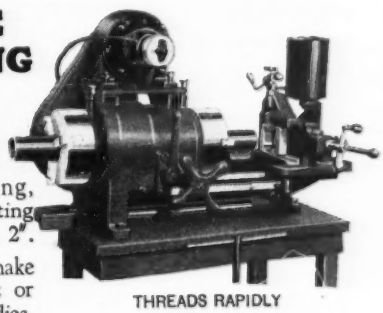
Catalog with full information upon request. Your jobber can supply you.

Compound Injector & Specialty Company
Established 1897
GEORGE J. DEHN, S. E., *President*
419-421 D N. Laramie Avenue Chicago, Illinois
Originators, Designers and Sole Manufacturers of
DEHNSANIGARD
THE QUALITY GOODS
Trade Mark Registered

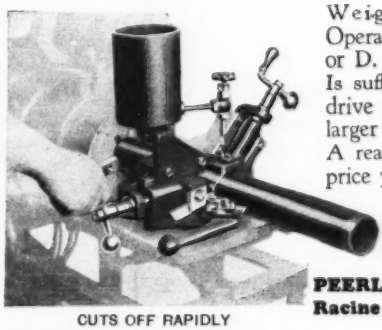
CUTS PIPE THREADING COSTS!

A full-fledged Portable Pipe Machine for Reaming, Chamfering, Threading and Cutting Off pipe from ⅛" to 2".

Uses any standard make of solid square right or left hand pipe or bolt dies.



THREADS RAPIDLY



CUTS OFF RAPIDLY

Weighs 250 pounds. Operates off either A. C. or D. C. lighting circuits. Is sufficiently powered to drive geared heads on the larger pipe, up to 6 inches. A real pipe machine at a price you can afford. Ask us about it today. Give us the name of your supply dealer.

PEERLESS MACHINE CO.
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"CHICAGO"
Pipe Threading Machines Production Precision
Latest and Most Advanced Types on the Market
Chicago Pipethread Machine Co., Racine, Wisconsin
Offices and Factory: 1621 Racine Street

Ohio Subscribes *to* Fund *for* Association Activities

W. H. Grabowsky of Canton elected president; Zone plan to be continued; Chain plumbing shops discussed

William H. Grabowsky of Canton, newly elected president of Ohio Master Plumbers' Association

THE voluntary contribution from the floor by individuals and local associations of more than $2,000 to assure the incoming officers ample funds to carry out the broad program proposed for the coming year, a lively discussion of the chain plumbing shop proposition and a decision to continue the zone plan inaugurated during the past year featured the annual convention of the Ohio Master Plumbers Association.

This year's convention, which was the state association's thirty-ninth meeting, was held at Springfield, February 4, 5 and 6. The program included reports on the work done during the past year by the state officers and addresses and discussions along the lines of business conduct. The year was one of progress for the state of Ohio, judged by the messages of the state officers and the reports of their several standing committees.

The special committee, of which Harry S. Blank of Dayton, is chairman, brought the matter of chain plumbing stores before the convention with the question as to how they would affect the independent contractor.

William Haas of Dayton took the floor to say he was connected with a contracting group, national in scope, and that he feels his connection with this group is not altogether selfish. He said it is necessary for a business man to follow the trend of the times and if a man can better his condition it is his privilege. Mr. Haas said his reason for joining the group was to better his own condition.

He pointed out he had been in the plumbing business for some thirty years and it was his experience that when the proprietor of a plumbing shop died his business died with him. He said he had made the move with an eye to the future welfare of his family. He feels that no business can be run successfully where the proprietor can not afford to get sick, adding it is necessary to have several persons in any organization with the ability to conduct it properly.

Mr. Haas said that to his way of thinking it should be a source of satisfaction to a man to be able to affiliate himself with a number of well established concerns over the country and to know that his own business will be guarded. He said that even though business were poor in one section of the country, in some other section it would probably be good, and the dividends would be shared equally. He does not think the proposition is comparable to the general conception of chain stores for the reason it is a contracting organization and has nothing to sell over the counter like the average chain store, adding that the installation is far more vital than the mere selling of products.

To his way of thinking, the merger is a step toward putting the industry where it belongs. The move is an experiment, he said, and may not work out as its organizers thought it would when they started it. In closing, Mr. Haas stressed the point that he had spent thirty years of his life doing all in his power to help the industry and that his aim will always be to uplift the plumbing industry and not to tear it down.

Harry S. Blank followed Mr. Haas to explain that the special committee did not have any individual person or company in mind when it submitted the question for the attention of the delegates. He said the report was made strictly in the interests of the plumbing industry. The speaker said it is obvious that conditions are changing and he feels that if the industry is to change the members of the association should be the ones to discuss it and the first to know of any change.

"If chain stores can be run with profit and with the same degree of satisfaction that we had as independents," Mr. Blank said, "then the state officers should give their attention to the subject."

President Maurer explained that the association did not have the power to interfere with any problem brought on by economic pressure.

W. E. Antrican of Mansfield said the question had

been hotly debated at the last national convention and he feels that a growth of the chain plumbing stores will eventually put the small contractor out of business.

P. J. Makarius of Dayton explained that he was the operator of a small shop and said that in his opinion the merger was the result of economic pressure, adding that every man had the right to establish himself. The plumbing business has never been on a sound business footing, he said. "The chain isn't going to wreck us, we are going to wreck ourselves," was the way he summed up the question.

A. J. Murphy of Cincinnati pointed to the few independent grocers now in business as a result of the chain grocery stores and expressed the opinion that the independent plumbing and heating contractor will have the same fate if the chain idea progresses in the industry. He said that he believed Mr. Haas was sincere in making the move he did, but he is afraid that executives not concerned with the welfare of the industry may later be in charge of such organizations.

Howard C. Baker of Toledo said he was convinced the chain plumbing store was coming, adding that the independent operator must of necessity become a merchandiser and a salesman.

Members and Locals Give Over $2,000

During the past year a large contribution to the Plumbing and Heating Industries Bureau, expenses in connection with the zone program, work on the proposed state plumbing code and various other activities were quite a drain on the state treasury.

The officers did not feel present conditions warranted an increase in the state dues, but at the same time they wanted to assure the incoming officers sufficient funds to carry on the extensive program already started and

L. A. Fischer, Springfield, chairman of the convention committee

H. L. Crockett, president of Springfield, Ohio, association

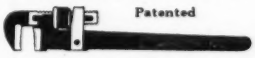
also to expand activities. Consequently, President Maurer in his annual report and also the board of directors, suggested that a direct appeal be made for contributions from the local associations and the individual members. This matter was turned over to the resolutions committee and upon its recommendation the plan was adopted by the delegates in the form of a resolution.

President Maurer started things off by asking representatives of the various locals to pledge what they could,

Balance is an Important feature in pipe tools

Balance is an extremely important, though somewhat rare characteristic of pipe tools for without it a tool is cumbersome, unwieldy and fatiguing. It is one of those intangible qualities that distinguishes a tool as a fine tool, the work of a master toolmaker. ARMSTRONG BROS. Better Pipe Tools are known for their balance. When you grasp an ARMSTRONG Pipe Wrench there is a thrill in its "feel." It fits naturally in the hand; has a satisfying heft. It seems to become a part of you and it "handles" as easily as if it were. Such tools make each job easier.

ARMSTRONG
All-Steel Pipe Wrench
Patented



A radically different pipe wrench of new design incorporating 10 major improvements. Circular upon request.

Write today for Catalog P-10. It shows and describes a line of improved pipe tools.

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
323 N. Francisco Avenue
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ARMSTRONG BROS.
CHICAGO

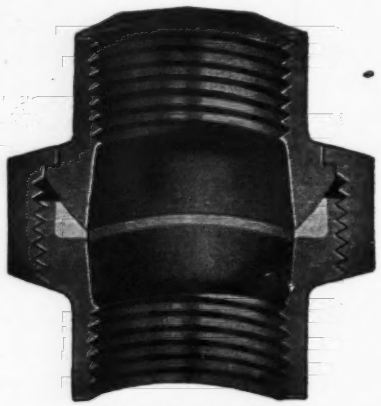
THE CHESTER
New Design China Lavatory

This new lavatory has many decidedly advanced sales features. It is equipped with accessory holders, has a FRONT overflow and only extends 15 inches from the wall although allowing full size 10 x 15½ inch basin.

Can be furnished without tooth brush openings if desired.

KEYSTONE POTTERY PRODUCTS
KEYSTONE POTTERY CO.
Trenton :: New Jersey

IMICO UNIONS



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Made of Refined Malleable Iron with Brass Seat Inserted in Place by Powerful Pressure So That It Cannot Become Detached.

Approved by Underwriters' Laboratories.

ILLINOIS MALLEABLE IRON CO.
Chicago, Ill.

Manufacturers Full Line Iron Pipe Fittings

The **KAINER**
PRESSURE GOVERNOR
for Hot Water Heating Systems

—Reduces the cost of a hot water layout.
—Eliminates expansion tank and fittings (with its danger of freezing and overflowing).
—Simplifies installation—makes a better job.
—Saves your time and your customers' money.
—Increases your profits and builds good will.

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KAINER & COMPANY CHICAGO
761-771 MATHER STREET
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Dayton being the first to respond with a promise of $200. In quick succession other local bodies over the state, through their official representatives, pledged their support. Following is a list of donations from the locals:

Dayton	$200	Warren	$ 50
Cincinnati	250	Springfield	100
Cleveland	250	Akron	100
Columbus	200	Newark	25
Mansfield	100	Lima	50
Youngstown	100	Ravenna	25
Canton	100		

The following individual contributions were made:

Edward Maurer, Cleveland.	$25	H. J. Weinzimmer, Cleveland	$10
William Haas, Dayton	25	Ben Kahn, Cleveland	25
W. H. Grabowsky, Canton	25	U. I. Bott, Canton	25
E. B. Kleine, Cincinnati	25	H. R. Eberling, Cleveland	40
Frank C. Clemens, Dayton	25	George Zeller, South Charleston	10
Alfred C. Eynon, Canton	50	Master Plumbers' Council of Cleveland	25
Charles F. Seifried, Cleveland	25		
Edward Frank, Cincinnati	25		

The total amount pledged amounted to $2,010.00. To this sum, Oliver Hoffman of Akron promised to add whatever his local allowed him as a delegate to the convention.

New Officers and Committees

William H. Grabowsky of Canton was elevated from the office of vice president to that of state president, succeeding Edward D. Maurer of Cleveland. E. B. Kleine of Cincinnati was elected vice president. Eb Ellen of Cleveland is secretary-treasurer of the Ohio association, having recently been elected for another five-year term.

Charles F. Seifried of Cleveland and L. A. Fischer of Springfield were elected delegates to the national convention at Boston. August Schmutz of Youngstown and William Fischer of Columbus were named alternates. Next year's convention will be held at Canton.

Following are the committees appointed by President Maurer to handle the convention's business:

Credentials—B. W. Follrath of Springfield, L. George Haucke of Springfield and A. A. Schmutz of Youngstown.

Resolutions—William Haas of Dayton, A. W. Baum of Canton and Charles F. Seifried of Cleveland.

Press—H. L. Crockett of Springfield, William Haas of Dayton and Adolph Weiss of Cleveland.

Memorial—A. C. Eynon of Canton, William Fischer of Columbus and Frank C. Clemens of Dayton.

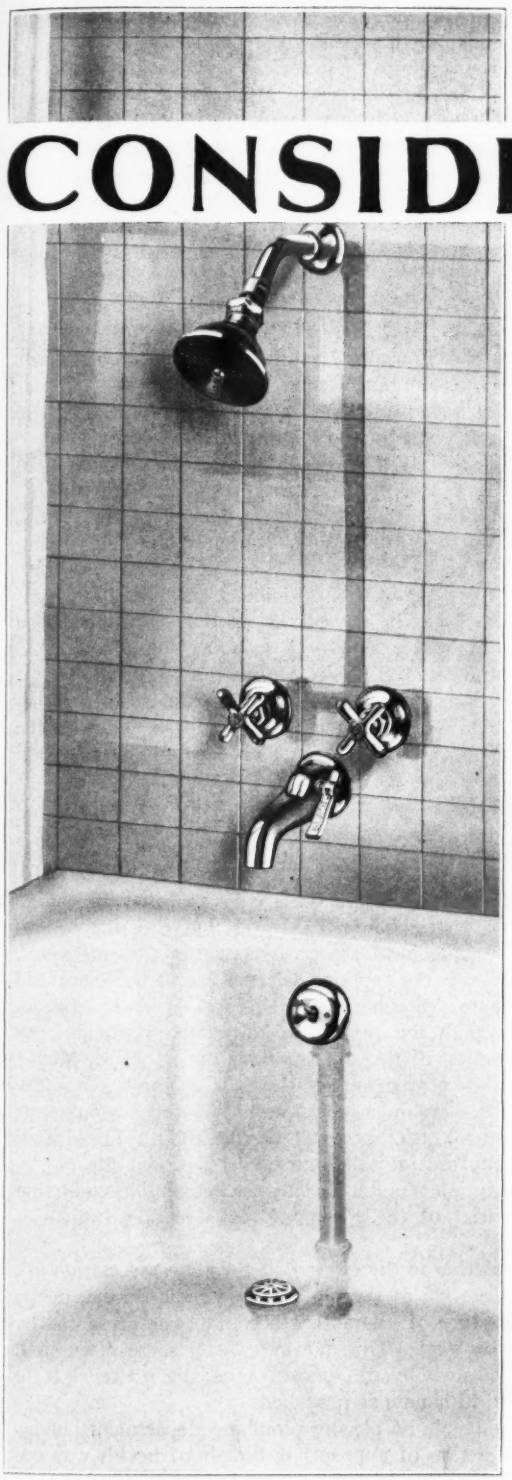
Grievance—William Schneider of Columbus.

Charles Herier of Springfield was appointed sergeant-at-arms by President Maurer.

The auditing committee, which was elected by the convention, consisted of C. W. Wilson of Youngstown, William Fischer of Columbus and Oliver Hoffman of Akron.

The Opening Session

The convention was called to order by President Edward D. Maurer who after a few remarks introduced L. A. Fischer, president of the Springfield association and chairman of the convention committee. Mr. Maurer summed up his remarks with the thought: "Conventions such as these if they don't do anything else they do instill confidence." Mr. Fischer took the floor for a few moments and welcomed the delegates and guests in



CONSIDER.....the New Manhattan Bath Fixture

By doing so, you put yourself in a position to sell more quality bath fixtures. Analyze these selling points:

1. A new 4-inch cast brass shower head so constructed that none of the holes will stop up. Always 49 streams shooting in the right direction. Face plate removable by loosening center screw, which cannot fall out. Asbestos face plate washer. All-metal ball joint perfectly machined. No packing washer to break up and clog the holes in the head.

2. Only two valves, separate HOT and COLD, in the wall. Readily accessible from face of wall. Made with the standardized working unit that's renewed as easily as a light bulb. All wearing parts come out with the loosening of the cap. Seat made of Monel Metal.

3. Diverter valve in spout on wall—not in wall. All-metal—no rubber, no spring. Operates by water pressure and gravity. Shower bather tempers water at spout and lifts lever for shower. No accidental scalding. When shower bather shuts off HOT and COLD valves, diverter automatically returns to tub position. No unexpected showers.

4. A 1-piece fitting for 6-inch centers. Real adjustability for varying wall thicknesses. Only two valves, spout and shower to connect up.

5. A pop-up bath waste with the stopper in the outlet of the tub. No need to get at it from behind.

6. Made in three attractive styles: Art Chrome, all-metal octagonal design, chromium plated; round pattern with either all-metal or china trim.

Architects and others in your city will welcome your introduction of the New Manhattan Bath Fixture. Write for prices and copy of new 76 page catalog just off the press.

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Original—Genuine

Sylphon Temperature Regulators, Pressure Regulators and Expansion Joints are in almost universal use, in thousands of buildings, in nearly all industrial plants, in great power plants, and in the homes of the people.

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SPEED HEATERS

"More Heat Less Steam"

DESIGNED and priced for contractors, SPEED HEATERS will put you a lap ahead in bidding and give you a good profit in the bargain. Clip this ad to your letterhead and we'll send you the whole story.

B. F. STURTEVANT CO.
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(See Domestic Engineering Plumbing and Heating Catalog)

EXPAN HUB SOIL PIPE

In *addition* to its specially designed gasket which absorbs all expansion and contraction strains and keeps joints gas-tight, Expan-Hub is made better throughout. Extra thickness at the hub adds strength and thickness and quality of materials is more uniform throughout making Expan-Hub easier to work.

Manufactured and sold by

ALABAMA PIPE COMPANY STRINGER BROS. CO., Inc.
ANNISTON FOUNDRY CO. THE WETTER PIPE CO.

Paragon Offset Ball Cock

Fig D-511

FOR tanks with supply close to corner. You don't touch the supply connection when you renew the bronze seat. And the lead refill neither splits nor corrodes. A quality fitting throughout. Write for Folder on complete line.

Through Your Wholesaler

The CENTRAL BRASS Mfg Co
PARAGON DIVISION CLEVELAND O.

the name of the local association and then took charge of the remainder of the opening ceremonies.

After the singing of "America" and the invocation by the Rev. Carl Sundberg, the Hon. Clyde Wallingford, Springfield city manager, spoke briefly. Stanley B. Mathewson, secretary-manager of the Springfield chamber of commerce, was also called upon for a few words. He expressed the opinion that research work is of the utmost importance to every type of business and suggested that those present give their support to all work of this nature in the plumbing and heating field.

Miss Alma Niesen of Cincinnati, president of the state auxiliary, and Mrs. H. L. Crockett, president of the Springfield auxiliary, extended the best wishes of their respective organizations.

A gavel was presented to President Maurer at the opening exercises by the Cleveland association.

As is customary at the opening sessions of Ohio state conventions, all of the past state presidents in attendance were introduced. Those who responded at this year's meeting were: A. C. Eynon, Canton; James A. Wood, Toledo; Harry S. Smith, Warren; C. W. Wilson, Youngstown; Frank C. Clemens, Dayton; Edward Frank, Cincinnati; Charles D. Ridenour, Springfield; Eb Ellen, Cleveland; William Rowland, Youngstown; A. W. Baum, Canton; William Fischer, Columbus.

Tribute was paid John A. Quinn, late national president, with a prayer by the Rev. Sundberg and with the entire assemblage standing in silence. Later a resolution was adopted by the convention, extending its deepest sympathy to the late president's family and to the national office.

Resolutions

In an important resolution it was voted that the zoning system be continued in 1930 and that captains be appointed by the local associations within the unit zone. The names of the captains selected are to be forwarded to the state secretary on or before April 1. In accordance with the resolution, the state president is to call a meeting of the zone captains on or before May 1 to formulate a program for the year on the basis of extended membership in all zones. The zone captains attending this conference will receive their railroad fare plus ten dollars in cash for expenses.

A resolution was adopted by the convention endorsing the activities of the Plumbing and Heating Industries Bureau.

A resolution to the effect that the state association ask the co-operation of the Ohio State Credit Bureau in the discontinuance of guaranteed accounts was presented by the Canton local. This, however, after some discussion, was withdrawn by its sponsors and the matter left to each local to handle as it wished.

The principle of placing plumbing departments under the jurisdiction of appropriate boards of health was endorsed in resolution form. Resolutions of respect and esteem were passed in memory of David H. Roberts and Edward J. Nolan, former presidents of the organization, both of whom died recently.

The principle of separate contracts for each and all of the three so-called "mechanical trades" upon all building construction was endorsed by the delegates. The convention went on record as being in opposition to the re-

ported recent action of the United States treasury department requiring that these trades be included in the general contract upon federal work. It was voted to bring this matter to the attention of the proper authorities.

A resolution on the death of John A. Quinn and one calling for voluntary contributions from the members, referred to in another part of this story, were also adopted by the convention.

The President's Report

President Maurer had prepared a complete report of the work of his administration during the year. He explained that the launching of the zone plan had made it necessary to hold more than the usual number of meetings, adding that the state was now divided into eight zones. Several of these zones, he said, have been subdivided and each one has been canvassed for members. President Maurer's report showed that twenty-nine zone meetings were held during the year.

E. B. Kleine of Cincinnati, newly elected vice president of Ohio Master Plumbers' Association

He pointed out that it was no easy matter to cover the entire territory effectively. He feels that with better building activity in the coming year a number of new members will be added to the association. Mr. Maurer expressed his appreciation to the Plumbing and Heating Industries Bureau for the services of David Lindsay.

He referred briefly to the new plumbing code, but left the details of this matter for presentation by the code committee. He also referred to the last national convention and reviewed the work of the state's publication during his administration. In speaking of apprenticeship in the state he said the committee was not very active. He feels it is wrong for the organization to relax its efforts along this line and recommended the employment of the regular quota of apprentices.

He touched on the keen interest that the women's auxiliary has taken in the affairs of the state association and expressed the hope that the auxiliary will continue to manifest the same interest in the association. He also feels that the program outlined by President Hoover and backed by the governor of Ohio will help the building industry. Mr. Maurer was able to report a 100 per cent attendance at all board meetings during his term of office.

Hear Health Commissioner

One of the most interesting addresses of the convention was delivered by Dr. H. L. Rockwood, commissioner of health of Cleveland, who talked on sanitation and public health. He said the question of water distribution and sewage disposal has created the present day plumbing industry. Dr. Rockwood explained that when Cleveland first began to take water from Lake Erie little was known about the diseases spread by water supply systems, and at that time rules and laws governing water distribution were not put through as a health measure.

Public health, he said, has been improved only as fast as we have learned the facts regarding the causes of the various diseases. He feels public health can not be sold like any ordinary commodity without having something of a definite nature to offer, and that the same is true of plumbing to a great extent.

He added in part "Health is a big asset for everyone and all are coming to realize it. To have the power of controlling an important phase of health maintenance is a favorable factor for the plumbing contractor from a business standpoint. The next twenty years will see a great development in public bathing and swimming pools. They are an asset if properly built, but plumbing codes are not yet equipped for the proper regulation of swimming pools. Ring worm of the foot is frequently contracted in public bath houses."

The doctor said it is up to the health boards and the master plumber to solve all problems of this kind, explaining that the customer will always take any advice that concerns his health, that it is an asset to the master plumber to be in a position to offer advice to his customers along these lines, and that he should take advantage of this opportunity.

Edward D. Maurer of Cleveland, retiring president of Ohio Master Plumbers' Association

Dr. Rockwood feels the public should be taught that the plumbing industry is one which has a great deal to do with protecting the public health. He said 75 per cent of the wage earners have an income of less than $2,000, and so the plumber must not create items that are too much of a drain on the pocketbook. He feels people should have the privilege of buying the better items if they are able to but that it should not be imperative for them to do so.

In closing, he said: "No plumber is justified in holding himself out as such unless he has a public health background."

National Director Snyder Speaks

A. H. Snyder of Detroit, Mich., a director of the National Association of Master Plumbers, was the official representative of that body at the convention. Mr. Snyder had just come from Philadelphia, where he attended the funeral of the late President John A. Quinn. Mr. Snyder referred to the active program Mr. Quinn had outlined for the national body for the year, adding that his loss was a tremendous one.

The speaker touched briefly on the work of the various standing committees of the national and told something of the plans for the forthcoming national conven-

THIS HAS HELPED secure many jobs from customers who want THE BEST

JAMES F. CRAWFORD
Plumbing and Heating
512 STATION AVENUE, HADDON HEIGHTS, N.J.

Jan. 13. 1930.

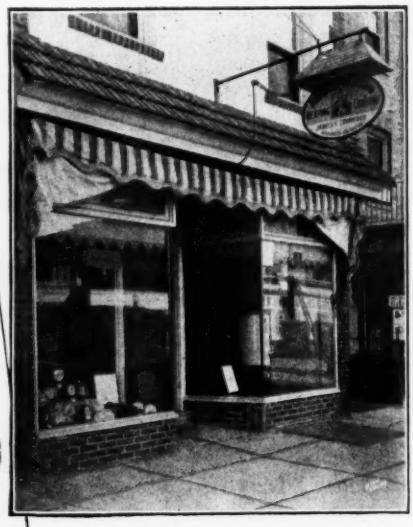
The American Radiator Co.,
2212 Walnut St.,
Phila., Pa.
Gentlemen:-

I want to express my feeling regarding your advertising, "The All American Job."

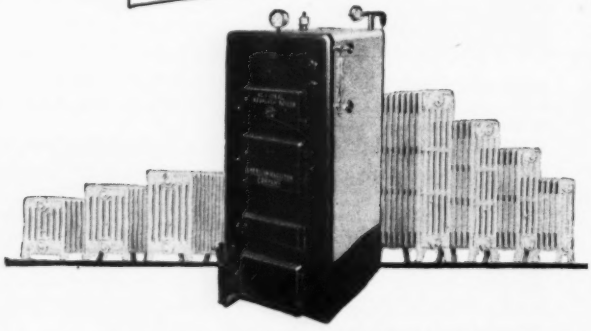
For several years, I have followed the practice of using nothing but your products on all Heating Installations, and am pleased to say that I have never regretted it.

This fact being known has helped secure many jobs from customers who want nothing but the best material used in their homes.

Very truly yours,
James F. Crawford.



This attractive shop of Mr. Crawford in Haddon Heights is another reason for his success.

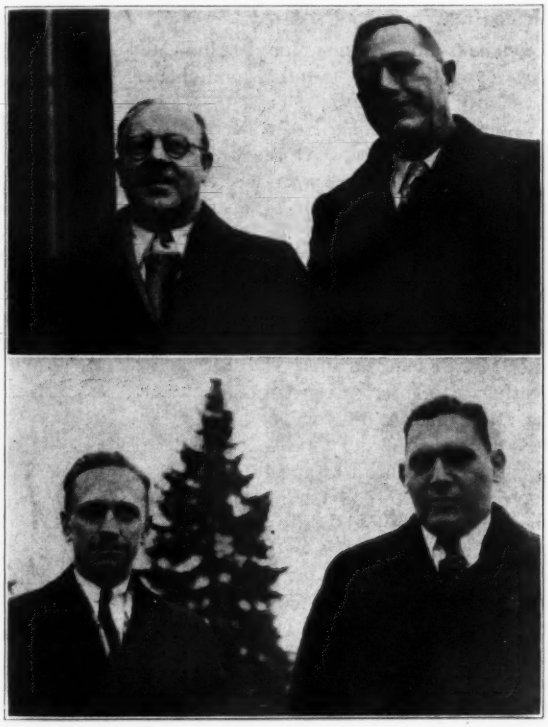


MR. CRAWFORD'S letter tells its own story and is just another example of how the "All-American" job is helping contractors everywhere to greater success and bigger profits.

AMERICAN RADIATOR COMPANY
40 WEST 40TH STREET, NEW YORK
Division of
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

tion which is to be held at Boston. The speaker also touched on the subject of trade practice rules, pointing out that the contracting branch of the industry is now working on this proposition.

Mr. Snyder said he was interested in the discussion which had taken place earlier in the convention in regard to the division of Ohio into zones. He said the state of Michigan had found the zone plan highly beneficial, especially from the standpoint of increasing the personal contact between the officers and the members. He said Michigan had not found the zone plan of particular benefit in securing new members, but that the



Top picture: W. E. Antrican and Edward Millington, both of Mansfield. Bottom picture: L. C. Leimkuehler of Copper & Brass Research Association, and George F. Newton, American Brass Co., Cincinnati. Photos taken at the convention of the Ohio Master Plumbers' Association

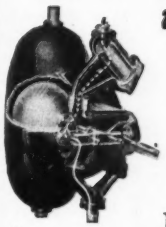
state officers feel the other advantages that are derived from it are of the utmost importance.

The employment of a field man by his home state, Mr. Snyder said, has produced wonderful results. He said the day has come when every state association must have such a man in order to keep up contacts all over the territory and to keep each section of the state informed as to the activities in the other sections.

Zone Leaders Give Reports

H. C. Baker of Toledo, in reporting on the situation in Zone No. 5, said he expected some definite steps would be taken by the larger shops in the district along trade organization lines during the month of February, and that a number of new members would probably be secured.

A report for Zone No. 4 was given by W. E. Antrican of Mansfield. He said seventeen out of the twenty



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People forget to turn feed water on or off—but this new self-cleaning duplex feeder is built to remember *always*. The self-cleaning feature takes it out of competition. Write for new booklet.

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Eliminate those unexpected "shots" of hot and cold water in shower baths. Stop the time wasted in trying to get water at the right temperature. Install Powers Mixers. Write for 20-page book.

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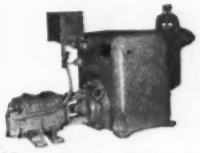
with The
POWERS
SHOWER MIXER

JENNINGS Condensation Pumps receive the condensation from steam radiators, particularly radiators set below boiler level, and pump the condensation back to the boiler.

Furnished in capacities ranging from 4 to 200 g.p.m. of water for heating systems up to 150,000 sq. ft. equivalent direct radiation. Write for Bulletin 99.



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LARGE AND SMALL
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are being made with Airco-Davis-Bournonville Welding and Cutting Outfits, easily taken to any point on the job.

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Manufacturers and distributors of Airco Oxygen, Airco Acetylene, Airco-National Carbide
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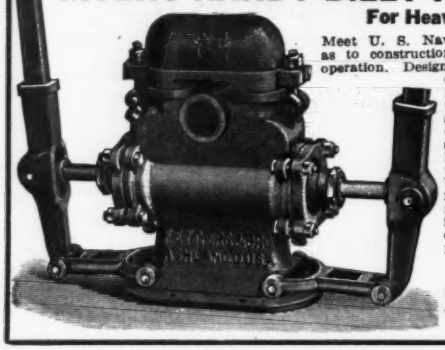
For Heavy Duty



Meet U. S. Navy requirements as to construction, capacity and operation. Designed for service on ships, in mills, mines and factories, etc. Three sizes—4, 5 and 6 inch cylinders single or double levers and pistons, operation by one, two or four men. Write for catalog showing this and any other styles of pumps.

The F. E. MYERS & BRO. CO., Ashland, Ohio

SPENCER *steam, vapor or hot water* **HEATERS**

With the Magazine Feed and sloping Gable-Grate.

They save money for owners and make money for you.

Spencer Heater Company
Williamsport, Pa.

New York Boston Philadelphia
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MADDOCK'S

3 high quality toilets means
3 opportunities for profit in
3 different price classes

The Madera at $85, the Madbrook at $50, and the Maderno at $35. Thos. Maddock's Sons Pottery, Division of Standard Sanitary Manufacturing Company, Trenton, N. J.

Two New Hoffman Products

HOFFMAN—ECONOMY PUMPS
Vacuum and condensation—for all types of heating installations.

HOFFMAN MOTO-HEATERS
An improved type of unit heater, in suspended and floor mounted types.

Write for catalogues

HOFFMAN SPECIALTY COMPANY, Inc.
Dept. X-30, Waterbury, Conn.

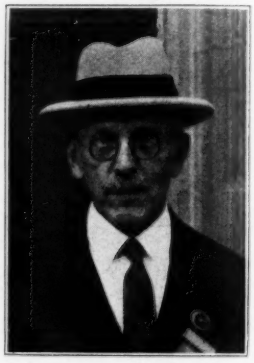
HOFFMAN VALVES : HOFFMAN CONTROLLED HEAT

master plumbers in Mansfield were members of the association, adding, however, that conditions in some of the smaller towns were not equally as good.

Frank C. Clemens of Dayton stated that key men had been appointed for the various cities in Zone No. 7 and that the first meeting was held in Dayton, with David Lindsay in attendance. Mr. Lindsay talked on the value of organization. A second meeting, Mr. Clemens said, was held in Dayton, adding that the wholesalers in the district were lending their moral support. Mr. Clemens reported a good attendance at all of the zone meetings except the last one, when bad weather made it impossible for many to be present. In closing, he read a list of thirteen new members secured.

Reports from Zone No. 10 indicated considerable progress in that section and a good chance of organizing in the city of Findlay.

Conditions in Zone No. 8 were discussed by E. B. Kleine of Cincinnati. At the first meeting in this district permanent officers were elected. The second meeting was held on November 14, also at Cincinnati, but bad weather cut down the attendance. D. C. Lindsay also spoke at this meeting. Another meeting was held on December 19 at Hamilton, and Mr. Kleine said bad weather also interfered with the attendance at this meeting. He said the next meeting would not be held until some time in the spring, when more favorable weather conditions would be assured. Mr. Kleine feels the prospects for lining-up the city of Oxford are bright. He said the officers tried sending telegrams on the morning of the day a meeting was to take place. The telegram simply reminded the receiver he was expected to be present at the meeting that night and, according to Mr. Kleine, the results were highly satisfactory.



Eb Ellen, Cleveland, state secretary-treasurer

Zone No. 3 held a meeting in Zanesville in September and reports from the section indicate considerable enthusiasm was shown at all of the gatherings.

Oliver Hoffman of Akron, reporting for Zone No. 2, explained that about 56 persons attended the first meeting at Akron. The second meeting, which was held at Youngstown, was attended by about 40 master plumbers, and the third meeting drew an attendance of 78 persons. Mr. Hoffman said the proposed state plumbing code was discussed at the meetings and that the feeling that progress was being made along the lines of trade organization prevailed. He feels the meetings should be confined to master plumbers.

Zone No. 6, according to William Schneider of Columbus, has held four meetings since its organization, with a good attendance at all of them. He said while no new members have as yet been secured, it is hoped to organize in the city of Mt. Vernon. Mr. Schneider feels that the meetings made for better understanding with the non-members in the section.

E. L. Flentje Tells Bureau's Plans

"Some two weeks ago a group came to Chicago for the Presidents and Secretaries Conference to attend what they thought was going to be a funeral—instead, they came to a celebration," were the opening remarks of E. L. Flentje, manager of the Plumbing and Heating Industries Bureau, in his address. Mr. Flentje said he realizes the bureau was slipping at one time but he feels it was a good thing for the organization since the problems were given special study and, as a result, the body's future for this year at least is absolutely assured.

He said the bureau wants to make a study of merchandising and of the credit situation, both of which he feels should be considered not as local problems, but as national ones. Mail order competition is also national and can not be combated locally, he feels.

The speaker voiced his ideas on the matter of utility companies selling gas appliances, saying the gas companies will not stop selling appliances until the master plumber proves he is capable of selling a volume of appliances comparable to that of the utilities.

"There seem to be," he said, "two sets of motives, diametrically opposed to each other. The manufacturer

Left to right: E. W. Meeker, H. K. Moore, C. B. Jackson and Henry Irving, all of Middletown, Ohio. Photo taken at the convention of the Ohio Master Plumbers' Association

and wholesaler want as many distributors as they can get. On the other hand, the contractor wants as few competitors as possible. All of the trouble we have in our industry comes from those opposed desires.

"If this condition is to be corrected there must be a drastic revolution in our thinking about our business. The day is coming when many manufacturers, wholesalers and contractors are going to have to go out of business. We are going to see the day when we have a vertical scheme of distribution, when there will be a group of wholesalers and contractors taking the products of one manufacturer so that the indiscriminate sale of materials to every Tom, Dick and Harry will be eliminated. I can see the time when authorized dealership will be prevalent in our industry."

Mr. Flentje feels that when this day arrives advertising will be effective for the master plumber. Under the present system, he said, the contractor advertises, but he is not sure that it is going to be to his benefit.

Other Addresses and Essays

George G. Gebhart, sales manager of the Hotstream Heater Co., Cleveland, Ohio, addressed the meeting as a

Adjustment? Seven and one half inches!

Every Moore Radiator Hanger has a perpendicular adjustment of five inches and, horizontally, it moves two and one-half inches.

It's no longer necessary to spend a lot of time taking accurate measurements. You can adjust the Moore to any position desired in a few minutes.

See the Moore line of hangers at your jobber's. It's complete—one for every type of radiator.

CARTY & MOORE ENGINEERING CO.,
(INCORPORATED)
611 West Larned Street
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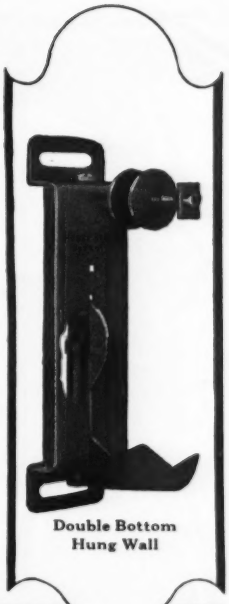
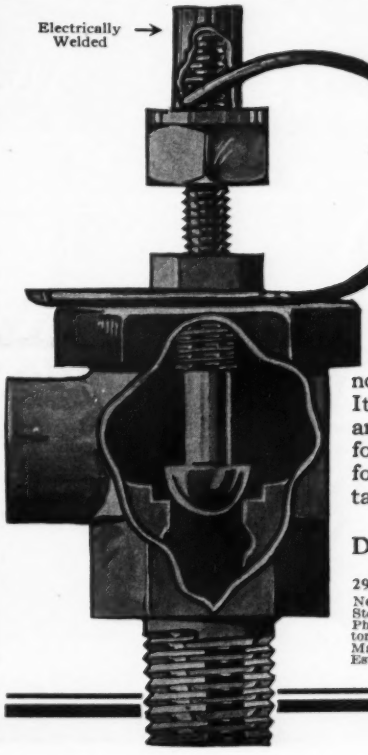


Double Bottom Hung Wall

MOORE RADIATOR HANGERS

DONNELLY



Outer Spring Valve

Protects the System

The spring of the Donnelly Valve cannot rust or corrode. It assures complete and lasting protection for the system. Write for the complete details.

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29 Mills St., Malden, Mass.
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COMBINATION LAVATORY SUPPLY~ AND WASTE FIXTURES

WISECO TRADE MARK EST. 1877 INC.

THE STANDARD OF QUALITY
SINCE 1877

Made from High Grade Red Pressure Metal
High Removable Seats : Swivel Discs
CHINA or ALL METAL TRIM
POLISHED NICKEL or CHROMIUM FINISH

Embodies the most popular and practical features of the finest fixtures and is furnished at a most attractive price.

Your Jobber Can Supply You

J. B. WISE, INC.

WATERTOWN :: NEW YORK

NEW YORK
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representative of the National Gas Appliance Manufacturers Association, taking as his subject, "The Merchandising of Gas Appliances." Portions of Mr. Gebhart's address will be published in a later issue of DOMESTIC ENGINEERING.

E. B. Kleine of Cincinnati had a well prepared essay for reading at the convention, the subject of which was "The Distribution Problem."

Harry M. Wormley of Struthers, although unable to be present, had prepared an essay entitled, "A Modern Credit Method," which was read by William Rowland.

Walter Klie of Cleveland, chairman of the essay committee, who was not able to be present because of a previous engagement, had prepared an essay on the value of trade associations. This was read by President Maurer.

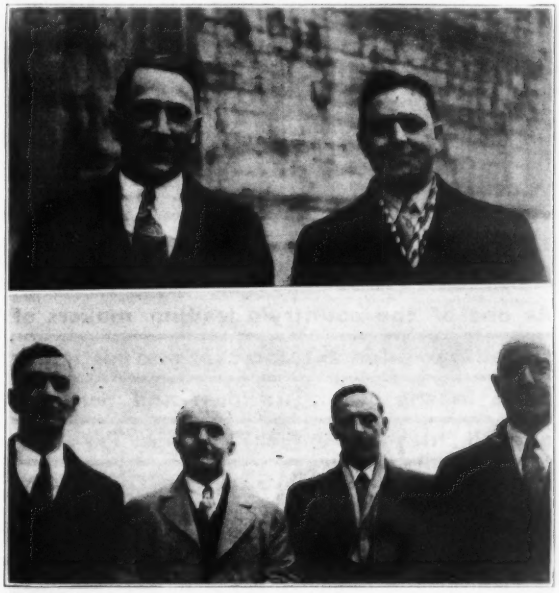
E. H. Benhoff of Cleveland, a member of the code committee, made a report on the work he and his fellow committee members have done on the proposed state plumbing code during the past year. It was explained that some details have yet to be cleared up and the code will probably be introduced before the legislature in 1931.

Mr. Benhoff said the re-drafted code is based largely on the present state code and also on the Hoover code. He went over the proposed code and explained in as brief a way as possible where changes had been made from the present one. The code committee has been working on this project for several years and with the amount of time available it was impossible to render a complete report of all that has been done. However, President Maurer explained that copies of the proposed code were available to all members for study.

Asa Manchester of Columbus, chief plumbing inspector for the state, took the floor for a few moments to tell of the activities of his department during the past year.

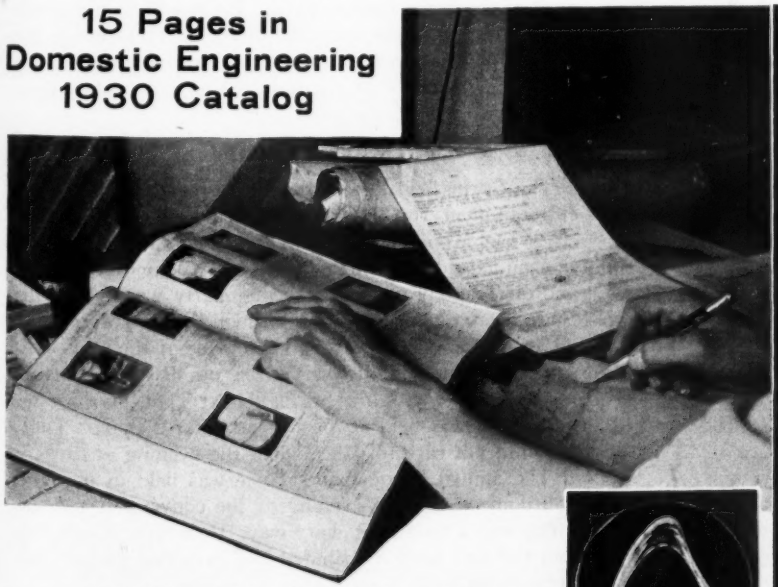
C. W. Wanger Talks

"Getting On in the World," was the subject of an ad-



Top picture: A. L. Mendenhall and C. C. Schwarz, both of the Duro Co. Bottom picture: W. H. Limbert of Akron, A. R. Edmonds of Barnesville, V. E. Baldwin and Harry S. Smith, both of Warren. Photos taken at the convention of the Ohio Master Plumbers' Association

15 Pages in Domestic Engineering 1930 Catalog



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DRINKING FOUNTAINS
The Specification For Sanitation

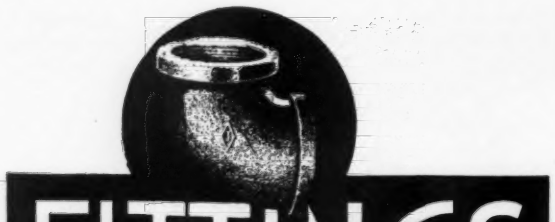
Two-Stream Projector; Practical Automatic Stream Control

To Help You Specify and Estimate

(See pages 231 to 245, incl.)

Plumbers and plumbing contractors will find our complete line illustrated and described in Domestic Engineering 1930 Plumbing and Heating Catalog. Fifteen pages of practical information to help you in "the specification for sanitation"—Halsey Taylor Drinking Fountains.

The Halsey W. Taylor Co.
Warren, O.



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by Jarecki

As one of the country's leading makers of threading equipment, Jarecki takes particular pride in the clean, uniform and perfectly aligned threads of Jarecki Fittings. Try them —they mean INCREASED PRODUCTION.

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Range Boilers

TANKS
for
Automatic
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To Your Specifications

COIL BOILERS
STORAGE TANKS
Pressure and Special
of All Descriptions

Riveted and Welded — Black and Galvanized

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S. W. Cor. 24th and Washington Ave., Philadelphia

dress by C. W. Wanger of the Woodward-Wanger Co., Philadelphia, Pa. In his opening remarks Mr. Wanger told of his experiences in the plumbing business, going back to the time when he was a journeyman plumber.

The big factor in all business today, he said, is not manufacturing and mechanical work, but selling. He pointed out that only 1 per cent of the retail dealers fail in business because of competition, while 34 per cent fail because of incompetency. He said his visits to various parts of the country had convinced him that master plumbers had too much dead stock. Mr. Wanger said each dollar that is invested in a business should be turned over at least three times per year.

He quoted another figure from a governmental department source which showed that 65 per cent of the retail failures were due to lack of merchandising knowledge.

With times and conditions changing so rapidly, he said, open mindedness is a necessary factor in business in order to keep up with developments. The success that any individual is to experience in the business world, the speaker said, depends on the individual's attitude of mind and his ability to meet the problems that confront him. He stressed the need for keeping faith, adding that no one would ever make good until that particular person had made up his mind he was going to do so.

Mr. Wanger drew a word picture of his ideal plumbing shop and outlined the steps he would take if he were entering the contracting business. His first move, he said, would be to set up a correct bookkeeping system. He feels that one of the fallacies of the industry is the lack of knowledge, on the part of all branches, of the cost of doing business. Mr. Wanger said he next would make a survey of the city in order to determine where most of the home owners lived. He would then find out their names, incomes, etc., and direct his literature to the various parties according to their respective incomes. He feels that members of the industry do not contact their customers enough.

Entertainment

The Springfield local arranged a splendid program of entertainment for the visitors during their stay in the city. On Monday evening, February 3, a public reception and dance was held in the ball room of the hotel, and on Tuesday evening a theater party was held at the State theater. Wednesday afternoon the men were taken on an inspection trip through the plant of the Ohio Edison Company and also visited a number of fraternal homes in the city of Springfield. That evening the grand ball was held at the Eastern Star Temple. Those who did not care to dance spent the evening at cards.

The annual banquet and dance was held in the hotel ballroom on the last evening of the convention and this affair was a success in every way. DOMESTIC ENGINEERING balloons were distributed and provided considerable amusement.

The general committee in charge of the convention arrangements consisted of the following Springfield men: H. L. Crockett, Anthony Ellinger, B. W. Follrath, John Kaliher, John Kreig, George Ridenour and L. A. Fischer.

B. W. Follrath and L. George Haucke constituted the registration committee.

Milwaukee Masters Hold Hassenpfeffer Dinner

The Milwaukee Master Plumbers' Association of Milwaukee, Wis., held its annual Hassenpfeffer dinner in January at the home of Walter Tesch. Those attending included Walter Dusold, president of the Milwaukee association; Charles Pelunek, Joseph Wittig, Joseph Brah, Henry C. Weber, F. C. Westphal, Peter Vogt, Arthur F. Boettcher and Walter Tesch.

◆

Hartford Masters Hold Dinner Meeting

The Association of Master Plumbers of Hartford, Conn., recently held a dinner meeting at the Hotel Garde which was attended by all but one member of the organization. President I. B. Skau was in charge of the meeting, which brought out some interesting discussions, and a program for acquiring new members was developed.

Running Water in Every Farm and Small Town Home

(Continued from Page 93)

that lined the drill hole, extended several inches above the floor. So around the casing and flush with its top they poured a solid concrete foundation for the new electric pump jack. And in one corner of the pit, they provided a vertical drain by sinking two or three lengths of tile and filling them with coarse gravel. This carries off any water that may collect in the pit.

New Pumping Unit Installed

Down in this pit, where it never freezes, they installed a brand new pumping unit. While they were about it they put in new drop pipe.

This outfit is connected so that it takes the place of the old pump in forcing water directly into the 350 gallon pressure tank in the house cellar. It includes an air pump that keeps enough air in the tank to provide good pressure and capacity.

Then to provide for the barn, they dug down to the old supply pipe, cut it off, and reconnected it to a T in the line from the pump to the house.

At first the owner had some trouble with this pipe to the barn. If he opened the faucet while the horses were drinking, a mixture of air and water would rush out with such a hiss and sputter that it scared the horses so they would not drink. He found that where the barn pipe left the T in the well pit, it sloped up for a short distance, allowing some of the air meant for the pressure tank to be carried through to the barn with the water. By turning the opening of the T downward, he overcame this annoyance.

For the electrical connections they used lead sheathed cable in galvanized conduit and buried it several inches. In this case the water pipe was already buried below frost, but where a complete new installation is made, it is advisable to lay a line of small sewer pipe with cemented joints from the basement to the well pit to provide a duct for both the water pipe and the electric wires. In case of any trouble, they can be removed and replaced without any digging.

BY SPECIFYING Heggie-Simplex Steel Boilers, architects and building committees for many important structures have endorsed what Heggie's 37 years have accomplished—the most modern of heating boilers, in which scientific design combines every essential with preeminent quality.

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Be sure the name
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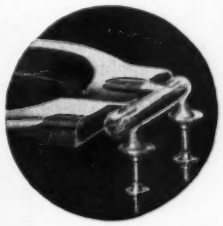
ELECTRIC CAST STEEL — *Screwed—Flanged*
MALLEABLE — *Standard—Extra Heavy—Hydraulic Oil Country*

STOCKHAM PIPE & FITTINGS CO.
Birmingham, Ala.
Stocks in Boston, New York, Chicago, Houston, Los Angeles

Whale-bone-ite Seat stands public toilet abuse . . . .



The Whale-bone-ite Seat and steel hinge molded integral with seat form an unbreakable unit. Seat is molded around laminated core of alternating-grain layers of hardwood. Proof against warping, cracking, splitting. Guaranteed for life of building. Costs no more. Ends replacement expense. Made by The Brunswick-Balke-Collender Co., Chicago.

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WHALE-BONE-ITE
TOILET SEATS

No. 300-R Complete Assembly Ready for Installation

Installation of a Barber Automatic Jet Gas Burner means that the complete work of conversion has been done. The Barber is furnished complete for every type of boiler or furnace. Ask for Barber Specification Data Sheets. Write today.

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Philadelphia, Penna.
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Bellingham Plbg. Supply Co., *Fixtures*

LEOPOLD HOTEL, Bellingham, Wash.
Equipped throughout with

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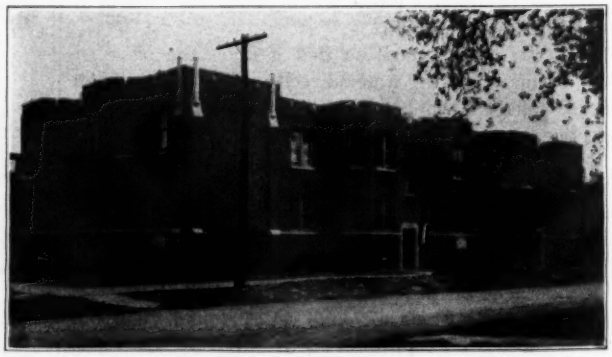

Benj. Zuckerman & Co. *Architects* David Levy, *Plumber*
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MARKETS

BUSINESS REPORTS FROM LARGE JOBBING CENTERS

Enameled Ware and Pottery Prices Are Advanced

PRICE changes in enameled ware and pottery featured the market during the past fortnight. Early in the period the majority of potters announced an advance in their prices to wholesalers on wash-down bowls and six-gallon tanks. On February 15 one of the large enameled ware manufacturers issued a new sheet advancing prices to distributors on practically all items, this move being followed by most of the other producers of enameled ware. The advance in price on these two commodities resulted in wholesalers increasing the size of their purchases and makers say that a fairly good volume of business was booked.

In the other lines of plumbing and heating goods business continued along much the same plane as during the preceding fortnightly period, with jobbers taking-in fresh material just about as their needs indicated. Contractor requirements in most sections are not of heavy proportions, and in most districts consumption is not as voluminous as a year ago at this time. Producing sources have well-assorted stocks and jobbers indicate no difficulty in securing material as wanted.

December wholesale prices of standard plumbing fixtures for a six-room house, as collected by the department of commerce from reports of twelve representative manufacturers and wholesalers, were $100.58 *as compared with* $100.58 *in November and* $101.23 *in December,* 1928.

NEW ENGLAND

Demand Shows No Appreciable Gain—

Building activities in the New England area have not been enhanced to any large extent during the several foregoing months. Prospective construction, reported during the months of January and February, augurs well, for reports from leading statisticians denote that the comparatively large amount of work now being planned will assume definite proportions in the coming months. There is some procrastination in the acceptance of architects' and contractors' proposals but it seems from reports that the early year building program will carry through quite satisfactorily.

Demand on the part of the plumbing and heating trade has not gained much momentum since the first of the year. Several wholesalers are still enjoying a seasonally good carry-over volume in their shipments to previously started operations. Present developments are somewhat laggard, and master plumbers, as a rule, find some difficulty in keeping their crews employed. Local unions of journeymen plumbers have felt some relief in this in-between-period due to activities on major operations, but it is stated that a more consistent constructive residential and non-speculative program will greatly aid the present situation.

Wholesalers' shipments during the past several weeks have not been of large proportions for contractors have been ordering in accordance with their definite needs, which, in the main, were light. Manufacturers' forwardings have not been of large volume, for early year post-inventory consignments to jobbers' stocks sufficed the latters' existing needs.

Potters effected an advance in their prices of staple ware during the past fortnight and most enameled ware makers also advanced their prices, which increases were reflected in wholesalers' quotations to master plumbers. Soil pipe and brass commodity quotations of makers continued firm. There have been no extensions in delivery service from sources.

Soil Pipe

Consumption requirements of this commodity reflect the dearth of new building operations. There are comparatively few large projects being started and construction of residential character has not as yet attained any real momentum. Foundry representatives have been in receipt of good early year volumes, both through strengthening of quotations to jobbers and also in replenishing of the latters' stocks after inventories. Makers' prices continue to be of firm nature which condition is also noted in jobbers' resale prices. Foundry shipments are expeditious.

Pipe—Brass, Steel and Wrought Iron

Spottiness in contractor demand for all classes of pipe seems to obtain, from the majority of wholesalers' opinions. Steel mills have experienced fairly good shipments since the first of the year but present receipts are somewhat in arrears. Wrought iron pipe, for industrial consumption, is moving from sources in satisfactory manner, but there is no real momentum for plumbing and heating consumption purposes. Master plumbers' requirements of brass pipe, while not voluminous, account for fairly good commitments from makers to wholesalers. No price changes have been reported by producers on any of the three kinds of pipe.

Fittings

Wholesalers' dispositions of cast iron and brass fittings during the past two weeks, from the majority of reports, were well-sustained. There has been keen interest evinced in this territory in the case of brass fittings, producers' and distributors' sales being largely upheld by contractors' extended purchases, which the latter deemed expedient in view of a strengthening market. Malleable fittings are not being consumed in better than seasonal proportion. Producers are able to meet present demands in prompt fashion. No price

revisions have been announced by makers.

Enameled Ware

The majority of wholesalers are sufficiently well stocked in regular ware to cover their near at hand requirements. Factory representatives state that their present bookings are not of large volume, but shipments from sources during the past month however, have been quite satisfactory, due mainly to commitments for replacements of jobbers' stocks and also in direct consignments to specific operations. Demand on contractors' parts is only seasonal, reflecting light diminution of distributors' stocks of staple items. No delivery delays are encountered. Since our last review, several makers have advanced their prices to wholesalers.

Pottery

Outstanding in this market was the announcement by the majority of potters of an advance in their prices of staple ware. Representing salesmen naturally booked a fairly good volume of business, mostly designated for delivery during the month of March. While there is still reported by potters a fairly good tonnage of special pieces for definite operations, the past month has not upheld in volume the usual staple ware consumption by master plumbers. Producers are in position to forward regular ware on short notice.

Plumbers' Brass Goods

Contractor demand is not especially brisk at this season of the year and wholesalers are consequently wary of laying in large stocks. Brass manufacturers state that their receipts thus far have been of good dimensions, but reconditioning of jobbers' stocks rather than movements into consumption, has accounted for the reports. There are not many future delivery contracts being closed between wholesalers and makers for it seems that the method of buying is largely for near-at-hand wants. No price changes have been announced by producers. Shipments from sources are prompt.

Range Boilers

While a seasonal demand prevails in this territory, both makers and wholesalers report somewhat of a standstill in their dispositions. Neither replacements nor new developments contain sufficient volume in range boiler demand to actively engage production at factories or distribution from wholesaling centers. Makers' representatives, however, entertain bright prospects for March and April. No price revisions have been reported by producers. Deliveries are prompt.

Boilers and Radiators

Movements of boilers and radiators according to the majority of manufacturers, have declined during the past fortnight. Distributors are buying only as contractor demand dictates and are not stocking ahead in any large way. Local warehouses of manufacturers, as well as sources, are amply equipped to afford shipments as wanted. Manufacturers have not revised their price schedules.

CENTRAL WEST

Price Changes Stimulate Buying—

Construction activity in the Chicago district continues at a slow pace, according to reports from various sources gathering data on this subject, and plumbing and heating contractors are only moderately busy. Wholesalers' turnovers under these conditions are of course light, and with a few exceptions manufacturers' salesmen report little business from buyers for jobbing houses for other than replacement purposes.

The outstanding development in the market during the past fortnight was the announcement of new prices on pottery and enameled ware. Early in the period covered by this review most potters issued new sheets carrying a substantial advance in their prices to wholesalers on wash-down bowls and six-gallon tanks. The change in enameled ware was announced on February 15 by one large maker, the new sheets bringing a good-sized advance in prices to jobbers. Most other enameled ware makers followed with new sheets carrying the higher prices.

Wholesalers in this territory, most of whom had only ordinary stocks of pottery and enameled ware when the price changes were announced, entered the market for heavier quantities of material. In most lines prices are holding firm, this being especially true of boilers and radiators, range boilers, and steel and wrought iron pipe.

Soil Pipe

Salesmen for soil pipe foundries say that wholesalers in general are not buying large quantities of pipe, but in some cases makers' salesmen feel that business has been as good as could be expected when the amount of new construction is taken into consideration. Some jobbers are reported to have contracted with foundries for their first quarter requirements. The base price now in effect, while ordinarily looked upon as a satisfactory one by producers, is not productive of the usual margin of profit because of curtailed production schedules, according to reports. Manufacturers are granting quick shipments.

Pipe—Steel and Wrought Iron

Some steel pipe salesmen interviewed say that business from plumbing and heating distributors in the Chicago district is no better than "fair," but that demand is at a better pace in some of the other sections of the Central West territory. Distributors' pipe racks hold average quantities of steel pipe and jobbers are ordering pipe just about as material is moved into consumption. Wrought iron pipe, according to most reports, is moving at close to an average seasonal pace, with distributors ordering in medium quantities. Both types of pipe are being shipped promptly at mills and prices to wholesalers have not been changed.

Fittings

The fittings market was generally firm during the past fortnight. Wholesalers displayed little inclination to stock the various types of fittings and, as a result, salesmen for manufacturing interests had little to report in the way of new business except small-sized orders. Contractors' requirements, according to most wholesalers, are moderate. Manufacturers are making quick shipments and have announced no change in their published prices to jobbers.

Enameled Ware

An advance in prices to wholesalers on enameled ware has been made by several large manufacturers since our last review was published. The new prices went into effect about the middle of the month and it is reported that wholesalers placed a fairly good volume of business with producers for later shipment. Contractor requirements are not heavy at the present time and, consequently, wholesalers' turnovers were not heavy during the period. Factories are continuing to deliver material according to schedule.

Pottery

Since our last report the majority of manufacturers have advanced their prices to wholesalers on staple items. With the announcement of higher prices, wholesalers entered the market for a fairly good volume of material, most of which was ordered for shipment by makers at a later date. At the present time contractor requirements are light and, consequently, wholesalers' turnovers of ware show little change from the preceding two-week period. Potters are in a position to grant immediate attention to orders for staple items.

Plumbers' Brass Goods

Reports indicate that wholesalers in many instances are still in possession

of brass goods purchased last year and, as a result, manufacturers' salesmen say that new business is no better than "fair." Most buying on the part of wholesalers is to bolster low spots in their inventories, although in some instances first quarter requirements have been taken care of. Factories are granting shipments in the ordinary time and makers have not changed their published prices.

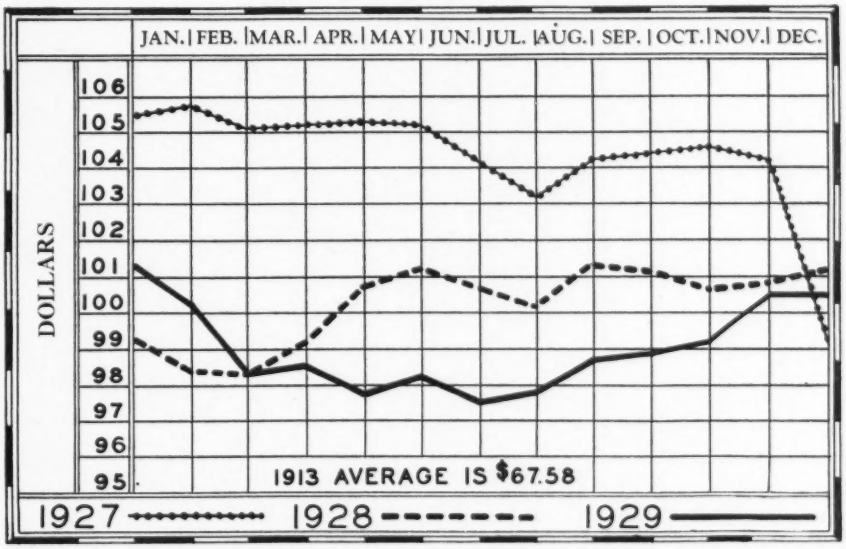
Range Boilers

Wholesalers in this territory, according to most reports, are purchasing range boilers just about as material is moved into consumption and, consequently, the volume of new business reaching manufacturers is only "fair." The market is reported firm at the existing price sheets of manufacturers and factories are delivering material promptly.

Boilers and Radiators

The movement into consumption of heating equipment was light during the past fortnight, according to most sellers interviewed. Contractors report the ordinary volume of repair work for this season, but new installations are not numerous. Factories have good stocks on hand and are taking care of business in quick time. Prices are unchanged.

Wholesale Prices of Plumbing Fixtures



The above chart shows wholesale prices of standard plumbing fixtures for a six-room house, as collected by the department of commerce from reports of twelve representative manufacturers and wholesalers. The trend of prices for 1927, 1928 and 1929 are indicated by the three lines on the chart

NEW YORK

Replacement Work Maintains Turnover—

While the demand for materials for new construction has declined in accordance with the trend indicated by building contracts let, nevertheless requirements for replacements and renovation have aided considerably in holding the volume of business near a normal level for this season.

Credit conditions are reported by several wholesalers as being spotty; in some sections there is still a quantity of unliquidated paper in the hands of contractors and wholesalers. This situation is being relieved by degrees with the passing of time according to close students of the situation. The several embarrassments of wholesalers reported during the past fortnight are considered in the light of a removal of uncertainties which have heretofore existed.

New building and engineering contracts let in the Metropolitan area of New York during the week from February 1 to February 7 amounted to $10,078,100, according to F. W. Dodge Corp. The above figure was $847,500 greater than the amount contracted for in the preceding week; compared with the corresponding week's total of $13,380,100, in 1929, there was a drop of 25 per cent.

Analysis of the week's total showed the following active classes of construction expenditures: $5,838,500, or 58 per cent of the total, for residential buildings; $1,668,300, or 17 per cent, for public works and utilities; $1,100,500, or 11 per cent, for commercial projects; and $803,800, or 8 per cent, for educational buildings.

The amount of new work reported in the contemplated stage during the week reached a total of $77,737,200, against $48,739,900, the total for the preceding week.

Soil Pipe

Requirements for this commodity are seasonally low at this time, although the recent change in price has inspired somewhat heavier shipments than would normally materialize. The heavier freight rates which go into effect March 20th have had the effect of causing many wholesalers to specify tonnage for shipment prior to that date. The amount of pipe moving to contractors is small, with the exception of some large operations now under way. Stocks on hand are low among most wholesalers, it is reported.

Pipe—Brass, Steel and Wrought Iron

The quantity of pipe moving from wholesalers' warehouses to contractors is somewhat greater at present than it has been, although volume is not fully as large as that of a year ago, according to most reports. Purchasing agents are buying brass pipe as necessity dictates, and the recent statistics on copper production and consumption have been watched with great interest in this connection. The consensus of opinion seems to be that the low ebb in the consumption of copper has now been reached. Prices of all types of pipe remain unchanged, and deliveries are made promptly by mills and wholesalers.

Fittings

The movement of fittings from wholesalers to contractors is spotty, reports from various areas being somewhat diverging. The shipment of brass fittings from plants continues heavy, and it is reported that many wholesalers are buying in quantity owing to market conditions. Malleables are enjoying a steady demand, according to most wholesalers interviewed, although volume is not commensurate with that of a year ago. Quotations are unchanged on fittings of all kinds, and aside from some delays in brass fittings, deliveries are reported as prompt. The advance in prices of steel pipe nipples is being firmly maintained; shipments are normal for this time of year and no heavy buying was encouraged inasmuch as the advance was without notice, it is reported.

Enameled Ware

Activity in enameled ware is holding at fair seasonal levels, according to most wholesalers interviewed. Demand for the most part is accounted for by renewals and large operations now in the finishing stage; the demand in outlying counties for small residences is characterized as slow. Colored ware continues to gain in popularity, and it is reported in some suburban sections that it is enjoying an increasing percentage of the total sales. Shipments are prompt in all stages of distribution, and inventories continue low according to most reports. Since our last review, several makers have advanced their prices to wholesalers.

Pottery

Since our last review was published, a number of potters announced an advance in their prices to jobbers on staple items and, as a result, wholesalers showed more of an inclination to enter the market for their future needs. In most cases jobbers stocks are at a minimum. No difficulty is experienced in obtaining deliveries from potters or wholesalers.

Plumbers' Brass Goods

The demand which was experienced shortly after the first of the year by manufacturers from wholesalers who wished to replenish stocks after inventory has been met, and current buying is proceeding on a basis closely geared to consumer demand. It is noted, however, that many buyers have ceased to order in the small quantities which characterized purchases during the last quarter of 1929, such shipments having been found uneconomical to handle for buyers as well as plants. One manufacturer of cast brass withdrew all quotations during the past week, and several others have made revisions upward on certain items used mainly in the metropolitan area. The movement of tubular goods to contractors is reported by wholesalers as being slow. Shipments from plants are in most cases reported as being prompt. Jobbers are filling orders promptly.

Range Boilers

The demand for range boilers continues to be mainly for replacement according to most wholesalers, inasmuch as the requirements for new one-family homes have fallen considerably in the suburban areas. Inventories at plants and with wholesalers continue to be low, and prices are firm at the level established last spring. Quotations on copper boilers remain unchanged, with volume gaining since the first of the year.

Boilers and Radiators

Wholesalers report some slackening in demand for boilers and radiators during the past fortnight, although the volume of business is said to be nearly on a par with that of a year ago in some sections. Stocks on hand are low at distributing points, and prices are firm, according to manufacturers interviewed. Requirements for repair and replacement work continue to be heavy.

MIDDLE ATLANTIC

Demand Is Moderate—

With the close of inventories in this section, except in a few isolated cases, business in the plumbing and heating line failed to materially increase. In the opinion of most of those interviewed, February thus far has not shown any improvement over January in the point of volume. Ordering is of a small nature in practically all instances despite the fact that jobbers in the main do not have large stocks on hand.

Manufacturers' representatives and wholesalers interviewed are of the opinion that business will show an appreciable gain with the advent of the Spring months.

An analysis by the F. W. Dodge Corporation of the building contracts awarded in the Middle Atlantic states shows little variance in the totals for the fourth and fifth weeks. Total construction figures for the fourth week from January 25th to 31st were $6,707,300, $2,600,200 of the figure going to commercial building and $2,167,600 to public works and utilities, the balance to residential building. The total valuation for the fifth week was $5,538,100, $2,846,700 of which was charged to residential building.

Soil Pipe

The movement of soil pipe maintained about the same pace as during the previous period, it is reported. The price advance instituted just before that writing stimulated business to some extent and with some exception it has been holding an even pace since then. Distributors are becoming well stocked for future business, and makers have a plentiful supply of pipe on hand. Prices are unchanged, and foundries make shipments in quick time.

Pipe—Brass, Steel and Wrought Iron

Brass pipe entertained a slight quickening in demand during the past fortnight, but has not reached the volume usually expected of it at this time. The demand for wrought iron pipe and steel pipe has lessened to some extent in the last two weeks, both of these items having been moving in a satisfactory manner previous to this writing. Prices on all types of pipe remain at the same levels and deliveries are made promptly.

Fittings

Master plumbers and heating contractors are making only moderate demands for fittings, jobbers reporting only a fair seasonal movement of these products into consumption. Contractors, as a whole, are not busy in this territory except with a few re-installation projects. Makers' representatives have received a moderate amount of business from wholesalers to fill-in their stocks, these commitments constituting the major portion of the trading. Prices since the recent revision are unchanged. Deliveries are prompt.

Enameled Ware

Since our last review, a number of makers have advanced their prices to wholesalers and improvement was noted by enameled ware producers in orders received during the fortnight.

January business was not up to that of last year, but with the conclusion of the inventory period, jobbers placed quite a few orders for enameled fixtures. Plants are effecting shipments in good time.

Pottery

The recent advance in prices on wash-down bowls and tanks stimulated some unlooked for activity on the part of potters and jobbers in this territory, but aside from this renewal of purchases things were rather of an ordinary nature in this commodity. The demand for high grade fixtures has fallen off with the close of the building season, except in a few remote cases of alteration and completion of structures started earlier. Potters are well stocked, and prices remain the same.

Plumbers' Brass Goods

Jobbers have already taken care of ordering for bolstering of stocks, according to the salesmen for manufacturing interests in this section, and large quantity orders are scarce at this time. Contractors are not requiring brass goods in large numbers and thus a slackening is apparent. Business thus far is not up to that of last year. Producers are well supplied and able to deliver in quick manner. Prices have not been changed and the market is reported firm.

Range Boilers

A gradual increase in commitments for range boilers is being experienced in some cases, although volumes in general are not equal to last year at this time. However, an optimistic tone is apparent and increased activity is expected in some quarters within the next few months. Prices are firm and makers have sufficient materials on hand to make timely delivery.

Boilers and Radiators

February business so far is about on a par with transactions made in a like period last year. However, price stabilization is a very notable feature of the boiler and radiator market. Wholesalers are renewing stocks which were depleted in the rather heavy demands made on them before the advent of the new year, giving makers a fairly seasonable activity.

SOUTHEAST

Buying Continues Light—

The past two weeks showed little change in plumbing and heating in the Atlanta district, and business held at a firm, but moderate rate. Contractors were only fairly well engaged and were busy primarily with reinstallation work. A number of major construction projects are nearing the finishing state and some observers are of the opinion that an increased activity will result. Jobbers are still reluctant to place large requisitions with the manufacturers. The month of February, so far, has failed to show any measurable increase in business.

Soil Pipe

According to several wholesalers interviewed, soil pipe turnovers were of a moderate nature, with business holding at about the same level established at the opening of February. Contractors are engaged primarily with reinstallation and repair work, and little new business has developed. No price changes have been announced and manufacturers are shipping promptly.

Pipe—Brass, Steel and Wrought Iron

There has been a rather slight increase in brass, steel and wrought iron pipe sales in the past ten days, in the Atlanta area, according to some reports, but in the majority of cases business in these lines is about the same as a fortnight ago. The increased interest in steel and wrought iron

The Stock Market

Range for Week Ending February 15, 1930†

Par Value	1930 High	1930 Low		*	Weekly High	Weekly Low	Weekly Close
NP	133⅞	118	Air Reduction Sales Co.	A	133⅞	124¼	130
NP	38	30⅛	American Rad. & Stand. San. Corp.	A	38	35¼	36⅛
25	98	80½	American Rolling Mills Co.	A	98	87½	97⅛
50	80⅜	69⅝	Anaconda Copper Mining Co.	A	78⅞	74¾	75
NP	38½	37	Bastian-Blessing Co.	C	38	27	37¼
NP	102¾	92	Bethlehem Steel Co., com.	A	102¾	99⅝	100½
100	127	122½	Bethlehem Steel Co., pfd.	A	126¾	126	126½
NP	20⅝	13⅛	Brunswick-Balke-Collender Co.	A	14½	14	14¼
NP	95⅝	80⅛	A. M. Byers Co., com.	A & E	87⅞	83½	85¾
100	114	109	A. M. Byers Co., pfd.	A & E	112	112	112
100	127½	118	Century Electric Co., com.	F	118	118	118
50	4¾	1	Chicago Nipple Mfg. Co., "A"	B	2¼	1	1
50	1½	1	Chicago Nipple Mfg. Co., "B"	B	1	1	1
25	44	43	Crane Co., com.	C	43	43	43
100	115⅝	113½	Crane Co., pfd.	C	115	115	115
20	21	11½	Eagle-Picher Lead Co.	H	13	12½	12½
NP	39¾	15⅜	Fairbanks Co., pfd.	A	20½	15⅜	20½
NP	38	34½	Fairbanks, Morse & Co., com.	A	37	35	35
100	108	102	Fairbanks, Morse & Co., pfd.	A	107½	107½	107½
NP	17	12⅛	Greenfield Tap & Die Corp.	B	17	16	16⅜
NP	25	22	Iron Fireman Mfg. Co.	C	24⅝	23¼	23¾
NP	148⅜	117	Johns-Manville Corp., com.	A	145¾	137¼	137¼
100	122	120	Johns-Manville Corp., pfd.	A	121½	120	120
100	120	118½	Jones & Laughlin, pfd.	A & E	120	119	119¾
NP	75	61	Minneapolis-Honeywell Reg. Co., com.	A	69	69	69
NP	60	48	Modine Mfg. Co.	B & C	60	57	58
NP	30½	26½	Motor Wheel Corp.	A	30½	29⅝	30¼
NP	42¾	35⅝	F. E. Myers & Bro. Co., com.	A	41⅞	39¾	40
100	105	101½	F. E. Myers & Bro. Co., pfd.	G	102	102	102
100	189½	137	National Lead Co., com.	A	184½	180	180
100	140⅝	138⅛	National Lead Co., pfd. "A"	A	140⅝	140	141½
100	117	116	National Lead Co., pfd. "B"	A	116½	116	116½
NP	4½	1¾	National Radiator Corp., com.	A	3½	3¼	3¼
NP	11	4	National Radiator Corp., pfd.	A	8	6½	6½
5	28	26	Herman Nelson Corp.	B	28	26	27⅜
NP	96	69	Ohio Brass Co., "B"	B & G	76	76	76
NP	29	26	Revere Copper & Brass, Inc., com.	A	27⅞	27⅜	27⅜
NP	72	70	Revere Copper & Brass, Inc., pfd. "A"	A	70½	70⅛	70⅛
NP	19⅜	2⅛	Richmond Radiator Co., com.	B	3	3	3
NP	38⅝	8	Richmond Radiator Co., pfd.	B	10	9⅞	10
NP	44½	29	Ruud Mfg. Co.	C	29	29	29
NP	31	19⅞	Spang, Chalfant & Co., com.	A	30⅝	28½	28¾
100	96	92	Spang, Chalfant & Co., pfd.	A	94½	94½	94½
NP	26	24	Time-O-Stat Controls Co., "A"	C	25½	25	25¼
NP	54½	44¾	Union Carbide & Carbon Corp.	A	51	46⅛	46⅛
20	32½	18½	U. S. Cast Iron P. & F. Co., com.	A	32½	27	31¾
NP	17⅝	15⅝	U. S. Cast Iron P. & F. Co., 1st pfd.	A	17¼	17	17¼
NP	19	18¼	U. S. Cast Iron P. & F. Co., 2nd pfd.	A	18⅝	18⅝	18⅝
NP	45⅝	42½	U. S. Radiator Corp., com.	B & D	45⅝	45¼	45⅝
100	100	100	U. S. Radiator Corp., pfd.	D	100	100	100
NP	29¼	21½	U. S. Rubber Co., com.	A	29⅝	25¾	27⅜
100	53⅝	47¾	U. S. Rubber Co., pfd.	A	53⅝	50	52⅞
100	189¼	166	U. S. Steel Corp., com.	A	189¼	181⅛	186
100	142¾	141	U. S. Steel Corp., pfd.	A	142½	141	141¼
NP	5⅜	2¾	Universal Pipe & Radiator Co.	A	5	4	4⅜
NP	35⅝	26	Walworth Co.	A	33⅛	31	31
NP	12¼	9	Wayne Co., com.	B & C	12⅛	10	10
NP	32⅛	28	Wayne Co., pfd.	B & C	30½	30	30
100	110	93	Wheeling Steel Corp., com.	B	110	108	110
100	135½	131½	Wheeling Steel Corp., pfd. "A"	B	133	133	133
NP	29¾	16	Williams Oil-O-Matic Htg. Corp.	C	16	16	16
NP	134⅞	108	Youngstown Sheet & Tube Co.	A	134⅞	125	134⅝

*Where listed—

A—New York Stock Exchange
B—New York Curb Exchange
C—Chicago Stock Exchange
D—Detroit Stock Exchange
E—Pittsburgh Stock Exchange
F—St. Louis Stock Exchange
G—Cleveland Stock Exchange
H—Cincinnati Stock Exchange

†If there is no trading during the current week, range represents last week recorded.

The Metal Market

	Feb. 17	Average Dec., 1929	Average Oct., 1929	Average 1929
PIG IRON—				
No. 2 foundry, Chicago	$20.00	$20.00	$20.00	$20.00
PLATES AND SHEETS—				
Steel boiler plates, Pittsburgh, per lb.	1.85c	1.95c	1.95c	1.93c
*Blue annealed sheets, No. 13, Pittsburgh, per lb.	2.25c	2.35c	2.35c	2.17c
Black sheets, No. 24, Pittsburgh, per lb.	2.65c	2.80c	2.85c	2.85c
Galvanized sheets, No. 24, Pittsburgh, per lb.	3.40c	3.50c	3.55c	3.57c
TIN—				
Straits tin	46c			
LEAD—				
Chicago	6.20c			

The Old Metal Market
Dealers' Buying Prices

	Per lb.		Per lb.
Aluminum clippings	15 c	Copper, light	13 c
Block tin	36½c	Copper, uncrucibled wire	14¾c
Brass, light	7¼c	Faucets and valves	9½c
Brass, heavy mixed	8½c	Lead, heavy	5½c
Brass, red	11½c	Solder Joints	8¼c
Copper, crucible	15¼c		

NOTE: Prices are those quoted on Tuesday of this week.
* Comparisons are with old blue annealed base, No. 10.

pipe, though, was not sustained. Jobbers are in a position to give prompt service and a good assortment of stocks is being maintained. Prices are firm and deliveries are prompt.

Fittings

Activity in the fittings market remained at about the same pace, apparently, as prevailed at the beginning of February. Sales in malleable and cast iron fittings were reported rather spotty. Prices are unchanged, and save for special items, deliveries are made on scheduled time.

Enameled Ware

Business in enameled ware, on the whole, has been quiet, with jobbers placing orders with the makers in quantities sufficient to insure good working stocks. Few orders are being placed for future deliveries. Manufacturers are in a position to furnish prompt service, and no difficulty has been reported in deliveries. Since our last review a number of makers have announced an advance in their prices to wholesalers.

Pottery

Little activity was found in the pottery market aside from some finishing materials being installed in a number of medium sized projects. Little new business developed and contractors are confined largely to reinstallation work. Jobbers have ample stocks on hand to care for the immediate requirements of the trade. A number of makers have advanced their prices to jobbers on staple items, and deliveries are being made with regularity.

Plumbers' Brass Goods

Business continued light for the past fortnight in cast and tubular brass goods. Contractors have been engaged in fill-in work and hence most orders placed with wholesalers have been of small size. Most jobbers have a good assortment of brass goods and are reluctant to place orders with makers specifying large quantities at this time. No change in makers' price sheets has occurred and no difficulty was reported in securing material from factories.

Range Boilers

No developments of any consequence occurred in the range boiler market during the past fortnight and business continued at a moderate pace. Wholesalers have sufficient quantities of range boilers in stock to meet the requirements of the trade, and are hesitant to place large requisitions with the makers. No price change was announced by makers, and deliveries are prompt.

Boilers and Radiators

The demand for boilers and radiators has been moderate for the past ten days. Heating contractors are fairly well engaged and some new business was reported, but in the main contractors are engaged with reinstallation work. Factory quotations continue firm and unchanged and deliveries are made promptly.

Picture taken at co-operative merchandising meeting in offices of Hajoca Corp., Philadelphia, Pa.

Detroit Brass & Malleable Works Establishes Branch in the East

The Detroit Brass & Malleable Works, Detroit, Mich., has established a branch office and warehouse at 4306 36th street, Long Island City, N. Y., for the purpose of rendering more adequate service to its distributors in the metropolitan district of New York City. This move is made possible through the acquisition of the entire facilities of H. Romeyn Smith, Inc., which concern for the last ten years has been the company's distributors in the territory mentioned.

John H. Taylor

Thomas J. Lendino

The H. Romeyn Smith business, which was organized in 1919, has been conducted since the death of Mr. Smith in 1924 by John H. Taylor, who now becomes director of the interests of the Detroit Brass & Malleable Works in the metropolitan New York territory. Prior to becoming identified with the late Mr. Smith in 1920, Mr. Taylor was connected for many years with the United States Radiator Corp., before which he was with Hart & Crouse Co. Thomas J. Lendino will assist Mr. Taylor and call on the wholesale trade in the territory. Charles Karcher is in charge of the warehouse. The entire line of products produced by the company will be carried in stock.

◆

Plumbing and Heating Council Formed in New York

The proposal by William F. Weber, president emeritus of the National Association of Plumbing and Heating Salesmen, for the creation of the Greater New York Plumbing and Heating Council, as laid before a meeting on January 31 in the Murray Hill hotel, New York City, at which plumbing and heating contractors, wholesalers, manufacturers and salesmen were present, was accepted. The meeting, presided over by Harry Sugarman, president of the Master Plumbers' Association of the Bronx, and attended by approximately sixty representatives of these branches of the industry, voted on the plan, the intent of which is the establishment of a means of raising the standards of the industry.

William E. Taylor, secretary of the Heating and Piping Contractors' New York City Association, called upon by Chairman Sugarman for an expression on the proposal, said, "The industries for many years have been operating as separate units, each for its own ends regardless of the effect on the other groups, with the result that conditions have become intolerable." Continuing, he said it is obvious a means of co-ordination is necessary to establish the industry on a real business basis either by such a plan as Mr. Weber offers or by his own, which he outlined and which has already been accepted by more than one hundred heating contractors, wholesalers, manufacturers, engineers, architects, etc., who have become members of the organization which is known as "The Heating Board of Trade of New York City." He suggested that the salesmen send a committee to that organization with a view to avoiding duplication of effort.

Following this talk, Mr. Weber called attention to the fact that his plan was broader, in that it provides for research, fair trade practice and merchandising efforts. An expression at the conclusion of a lengthy discussion from Harold Thompson, New York manager of Oster Mfg. Co., in which he said that he felt all manufacturers would be wholeheartedly behind any proposition that will bring together representatives of the industry with a view of bettering conditions, was offered together with a motion that a vote be taken to get the consensus of opinion of the meeting as to whether or not the council should be established. Joseph Spivak, from the wholesalers' standpoint, seconded it with the result that it quickly carried. This was followed by a motion that Mr. Weber be appointed temporary chairman, which was also passed as did still another motion which provided that he appoint a committee of four persons from each of the groups with instructions that they put the proposition before their respective organizations.

◆

Crane Officials Meet With East Bay Plumbers

Plumbing and heating contractors of the East Bay District were guests of Crane Co., at a luncheon in the Athens Athletic club in Oakland, Calif., January 10, when they listened to an address by Vice President L. B. Peeples on the subject of trade practice conference rules and their application to the industry at large.

Speaking of his company's desire to co-operate with the master plumber, Mr. Peeples said in part: "Your interests and ours are identical; we are all in the same boat; we must sink or swim together; and I am here today to pledge Crane Company's earnest efforts to work with you."

Explaining that the motives behind the adoption

Left to right: F. F. Elliott, sales manager, San Francisco branch; L. B. Peeples, vice president; J. E. McIlreevy, San Francisco branch manager, all of Crane Co.—Photo taken at the luncheon given by Crane Co. to East Bay plumbing and heating contractors

Exhibit of Chicago Pump Co. at recent Buffalo convention of the National Association of Master Plumbers

and application of the trade practice rules were actuated by a desire to stabilize the price-structure of the industry for the benefit of every branch concerned rather than any one particular group, Mr. Peeples pointed out that these rules benefit the retailer as much as they do the jobber.

"Credit terms as well as the strictly ethical side of our business," explained Mr. Peeples, "are also covered by these rules." The speaker also referred to the growing tendency on the part of master plumbers' associations throughout the country to follow the lead of the jobbers with regard to trade practice procedure.

In conclusion, Mr. Peeples touched on the subject of general business conditions within the industry as he has observed them on numerous transcontinental trips, closing his remarks with the statement that ". . . there isn't anything in volume alone. Volume without profit is a waste of effort."

Short, informal talks were made by W. H. Picard, president, and V. A. Edgeworth, business manager of the Merchant Plumbers' Association of Alameda County, and J. E. McIlreevy, manager of the San Francisco branch of Crane Co. R. M. Silknitte, Oakland branch manager, acted as chairman of the day.

In addition to the Oakland masters present, there were representatives from Alameda, San Leandro, Berkeley, Richmond and Walnut Creek.

Obituary

Francis J. Oliver

Francis J. Oliver, president and treasurer of Oliver Bros., New York City, died suddenly from a heart attack on February 7 at his home, 347 Prospect avenue, Hackensack, N. J. Mr. Oliver was born November 1, 1862 in Brooklyn, N. Y. He is survived by his wife, three sons and one daughter. Requiem mass was held in the Holy Trinity church, Hackensack, and interment was at St. Joseph's cemetery.

Robert C. Zannoth

Robert C. Zannoth, president of the Roberts Brass Co., Milwaukee, Wis., died recently in the Deaconness hospital in that city. Mr. Zannoth was born in Germany in 1866, came to America in 1884 and settled in Detroit, where he remained until 1900, when he moved to Milwaukee. He was originally a tool maker and opened a small machine shop about 25 years ago. In 1914 he established the Roberts Brass Co. and began the manufacture of heating and plumbing specialties and automobile accessories. Mr. Zannoth was a member of the Milwaukee Gun club, the Milwaukee Athletic club and the Masonic fraternity.

Charles J. Waldow

Charles J. Waldow, Buffalo, N. Y., president of the Buffalo Plumbing Supply Co., died recently in that city after undergoing an operation for appendicitis.

Well known in Republican political circles in Buffalo, Mr. Waldow was identified with many municipal, state and federal campaigns of recent years, although he had never entered politics in an active capacity.

Mr. Waldow, who was also a director of the East Side National Bank and president of the East Side Share corporation, was born in Buffalo. He is survived by his widow, two stepsons, four brothers and one sister.

Thomas A. Stevens

Thomas A. Stevens, president and general manager of the Empire Brass Mfg. Co., Ltd., of London, Ont., died at his home in Toronto, Ont., recently after a long illness. The deceased established himself as a master plumber in 1872 and in 1877 he organized a company to build the London waterworks system, which is still in use. Mr. Stevens organized the Empire Brass company in 1903.

Clarence W. Hodges

Clarence W. Hodges, general purchasing agent of the Worthington Pump and Machinery Corp., New York City, died on January 17. Seemingly enjoying the best of health, Mr. Hodges was taken suddenly ill and died at the Paterson (N. J.) hospital as a result of an operation. Mr. Hodges was born at Randolph, Vt., May 15, 1876, and was graduated from Williams College with the class of 1900. For some years he was employed by the American Locomotive Co. as purchasing agent, and since 1918 he had been with the Worthington organization in the same capacity.

Howard E. Chickering

Howard E. Chickering, for 30 years a member of the sales organization of Fairbanks, Morse & Co., Chicago, died of heart disease at his home in Chicago, January 23, in his 59th year. Prior to his retirement several years ago, Mr. Chickering was manager of both the Cleveland, O., and the New York City sales offices of the company.

Fred M. Kimball

Fred M. Kimball, advisory manager of the motor division of the industrial department of the General Electric Co., died February 5, in Lynn, Mass. Mr. Kimball had seen many years of service with General Electric Co. and was well known throughout the motor industry. He had been ill for some time. Born in Barton, Vt., July 7, 1861, he received his education in electrical engineering at Massachusetts Institute of Technology.

BEHOLD . . . . !

THE WOODEN INDIAN OF THE PLUMBING TRADE!

Remember when a cigar store wasn't a cigar store unless a wooden Indian stood on guard outside? That was back in the days when gas lighting was the last word in illumination. And the plumber, too—remember the sign over his door? It wasn't complete unless the word *plumber* was followed by *"& gas fitter."*

Gas lighting certainly was a great business in those days—until the electrician began to head the chorus in "Lead Kindly Light."

Times have changed. Various emblems of trade have likewise changed, or completely disappeared. The cigar store Indian has been relegated to a glass cage in a museum and the *plumber's wooden Indian, the "gas fitter" sign* is peacefully gathering cobwebs and dust in the cellar.

THIS MESSAGE IS ESPECIALLY DIRECTED TO PLUMBERS IN GASLESS DISTRICTS

BUT HERE IS THE POINT!

The disappearance of the wooden Indian did not signify the end of the cigar store—but—when Brother Plumber ripped off his gas fitting sign, *it meant that the gas fitting days were over.*

And did the gas companies go out of business? Well, to mention the figures the gas industry uses to describe its revenues would stagger the imagination. The growth of the gas industry is tremendous, and its future even greater because modern standards of living have made gas a necessity. But does the city plumber figure in this vast profitable enterprise? Mute testimony of his exclusion from the profitable gas field is the obsoletion of the title "gas-fitter."

The plumber whose work takes him into gasless territories knows of the countless homes, institutions, schools, etc., that are without gas and need gas. *We offer to that plumber the opportunity of affiliating himself with an enterprise which will make it possible for those beyond the gas mains to enjoy a gas service such as city dwellers have.* It is needless to mention the opportunities for substantially greater profits from this field. Every active plumber knows that. It is an opportunity for that plumber to become identified as the local gas company of his community with its resulting profits and prestige.

This organization (65 years in business) produces independent private gas systems for constructions beyond the gas mains by which gas is produced on the premises, automatically and with absolute safety, in unlimited quantities *and within city costs.* It is an installation job which rests exclusively with the plumber *whose profits do not cease with the completion of the job.* Each installation represents a source of perpetual income for the plumber.

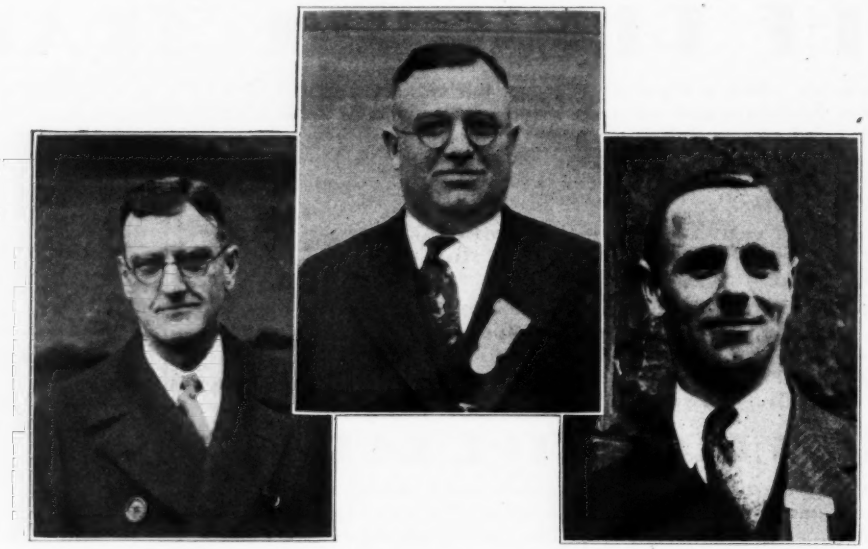
Never before has such an opportunity been offered to the plumber. It is a chance to become identified with an industry which functions profitably regardless of business conditions or seasons.

Why not let us discuss the proposition with you? Just initial your letterhead or billhead and we will present you with the complete detailed story of a rare and profitable merchandising plan in which the plumber is included to an unusually large extent.

TIRRILL GAS MACHINE CORP.

50 CHURCH ST. NEW YORK CITY

Educational Features Stressed *in* Minnesota Program



At left: H. C. Ridler, president of Minneapolis association and state treasurer; Harvey Strader of Minneapolis, newly elected state president; E. J. Bossard, president of St. Paul Retail Plumbers' Association

Time payment selling discussed at length; H. W. Strader of Minneapolis elected president

MEETING in the Lowry Hotel, St. Paul, February 4 and 5, for its 36th annual convention, the Minnesota Retail Plumbers' Association altered the usual order of convention business. On the first day all of the matters up for consideration were treated of, leaving the entire second day free for an educational program. Before the first day's sessions were closed all of the business usually held over until the closing session had been completed. Even the new officers and directors were elected on the first day, thus giving the new board an opportunity to confer with the old board during the convention, and permitting the new president to take the chair for the second day's proceedings.

Officers and Committees

The new officers are: President, H. W. Strader of Minneapolis; vice president, A. A. Schmidt of St. Paul; secretary, W. F. Chapman of Minneapolis; treasurer, H. C. Ridler of Minneapolis; sergeant-at-arms, William Mickelson of Montevideo. The new directors will be: H. W. Benson of St. Cloud, Charles Olson of Winona, E. J. Bossard of St. Paul, A. Oman of Pine City, M. Elson of Minneapolis, Axel Peterson of St. Paul, J. G. Mehl of Albert Lea, Ben Benson of Wilmar, H. C. Hanson of Virginia, A. Cherne of Eveleth and J. Daley of Rochester.

W. F. Chapman, in the president's chair at the opening of the convention, appointed the following committees: Auditing, J. Hedman and J. Holt of St. Paul and H. C. Hanson of Virginia; Credentials, J. O'Donnell of St. Paul, H. W. Benson of St. Cloud and A. Lacher of Minneapolis; Grievance, F. A. Beier of St. Paul, J. A. Daley of Rochester and H. C. Ridler of Minneapolis; Memorial, H. M. Porter of Minneapolis; Nominating, M. Fox of Minneapolis, E. S. Gifford of St. Paul, A. M. Wintheiser of Minneapolis, A. Lacher of Minneapolis and F. A. Beier of St. Paul.

The reception committee was composed of E. J. Bossard, president of the St. Paul group, W. F. Stimer, L. Zuehls, Andrew Nelson, and A. A. Schmidt, all of St. Paul; and Bob Arthurs and M. Elsen of Minneapolis. Resolutions: Axel Peterson of St. Paul, Carl Broman of Duluth and H. M. Porter of Minneapolis. Rules: T. Shetka of St. Paul, William Mickelson of Montevideo and Charles Olson of Winona.

At the opening of the first session, E. J. Bossard, president of the St. Paul association, welcomed the members. Mr. Chapman then called attention of the members to the plan for the convention. "We will take care

of most of the things which come under the head of the business meeting today, and would like to wind up today, even with the election of officers, and then have a meeting of the new officers and directors. Tomorrow will be given over to an educational program."

After roll call and the reading of the report of the Rules Committee, the letter from the chairman of the national convention committee was read. H. Merwin Porter, a past national director, said: "Any of the men who have attended these national conventions have been benefited in more ways than one. In Boston there are some historic points of interest which we have not had before, and I believe that every year, as far as the national is concerned, there have been additional subjects coming up which give a man a chance to keep himself posted on current trends in the industry."

Axel Peterson, a past state president, and keenly interested in the matter of a code for the state, reported on the failure to secure the passage of the code, due to the fact that it did not come up for attention in the senate until too late. It had passed the house, but did not get to a vote in the senate. Mr. Peterson said, in part: "There was considerable opposition from within the ranks. It is necessary to go before the legislature with a united front. Any dissension in the ranks makes it practically impossible to secure legislation."

F. A. Beier of St. Paul, a national director, took the chair temporarily in the absence of Mr. Chapman, and spoke briefly concerning the death of John A. Quinn, president of the national association.

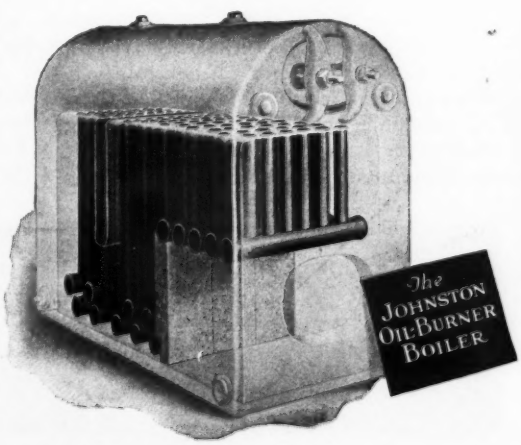
At the opening of the afternoon session, Mr. Beier, speaking as national director, outlined the work of the various national committees and the new program of the Plumbing and Heating Industries Bureau, which, he said, was based on the following beliefs: That the present channels of distribution should be maintained; that the bureau offers a common meeting ground for the discussion and solution of the industry's problems; that the bureau does not and will not usurp the activities of any existing group; that the public can be induced to purchase more and better products through judicious publicity in newspapers and magazines; that the contractor can help to make better customers; that the bureau offers an opportunity for constructive group effort.

Left to right: E. R. Anderson, W. W. Hughes and S. V. Harvey, all of Minneapolis. Photos taken at the convention of the Minnesota Retail Plumbers' Association

At this point in the program the chair introduced Mrs. Axel Peterson and Mrs. John Holt of St. Paul. Mrs. Peterson welcomed the delegates, saying, in part: "We have the pleasure and honor to bring you greetings from the master plumbers' association of St. Paul. We wish

THE JOHNSTON OIL-BURNER BOILER

Increases your earnings by reducing Service Calls



When do you get calls for service on your oil burner installations? Usually about midnight with the temperature below zero and the roads blocked with snow! You give service, but do you like to give it? Your customer asks for service, but he would be happier if he didn't have to ask for it.

The boiler is a part of the heating plant. It should be not only efficient but also trouble-free. Dealers who hook their burners to the Johnston Oil-Burner Boiler make a profit and keep that profit. This boiler has been in use for four heating seasons without a single complaint from architects, dealers or users.

JOHNSTON BROTHERS, Inc., Ferrysburg, Michigan

Meet your real competitors on their own ground

*By your real competitors we mean all those retailers who address sales messages to your customers—the retailers who sell radios, automobiles, furniture, and hundreds of other things.

They select the newspapers because they have found that newspaper advertising is effective.

Meet them on their own ground with the message of the products and the service you offer—give the prospect an opportunity to balance the benefits of your service with those others.

Advertising Made Easy For You

Our Retail Advertising Service makes advertising easy for you. We send you cuts every other week for the illustrations—you clip the copy from your issue of DOMESTIC ENGINEERING, and hand it, with the cut, to your newspaper. Easy, isn't it? Send in your order today for three months' service only $4.20.

DOMESTIC ENGINEERING,
1900 Prairie Avenue, Chicago

Send me the *Retail Advertising Service* for 12 weeks.
Check for $4.20 enclosed.

Name.....

Address.....

City.....State.....

you success. The ladies have an important part to take in social and civic affairs. It is important to you gentlemen of the plumbing trade that we do things, as they bring our industry to its proper place and appreciation with the public."

Mr. Chapman, in thanking the ladies for their visit, said: "Nothing has been done to stabilize things more than the women's auxiliary. Frequently we find that a man who wants to drop out of our association is kept in it by reason of the fact that his wife belongs to the auxiliary and has no intention of leaving it."

Central States Organization

The chair called on A. E. Harroun, manager of the Minneapolis Retail Plumbers' Association, to report in connection with a visit to Chicago to attend a meeting which was to consider the formation of a central states group. Mr. Harroun said: "The meeting I attended really offered no definite plans. Afterwards we received a letter saying they were going to formulate and prepare articles of incorporation and by-laws. We did not go down again and I do not know whether or not this thing has gone forward.

"I wrote the national association. We did not want to carry our Minneapolis organization into conflict with our national organization. In Chicago, it was said the new organization would be supplementary to the national. The national said they knew nothing about the central states organization. We felt that if the central states group was going to be supplementary to the national, it would merely be an additional burden on our members in the way of dues."

Association Needs

During a period of open discussion for the welfare of the association, the need for more organization work was expressed. A. Johnson, of Eveleth, said that he thought there ought to be a change in the attitude which the average man took toward the association. "Most of us," he said, "when we are asked to join ask: 'What is there in it for me?' I think we ought to change that attitude and, using the same words, say, 'What is there in me for it?'"

H. C. Ridler, president of the Minneapolis association and also state treasurer, said: "It is necessary to increase our membership. I am satisfied that every other association which is going along successfully is doing everything possible to increase its membership. I think every man in the industry ought to belong to some organization in his industry. Strong local and

Left to right: John Kummerwold and F. H. Farrell, both of Duluth; H. C. Hansen, secretary of Range association, Virginia, Minn.; A. F. Cherne of Eveleth, president of Range association.—Photos taken at the convention of the Minnesota Retail Plumbers' Association

state groups help the national association to be strong. Until recently, I did not belong to an association. Someone asked me to come in. The only reason I had not joined was that there were some men in the organization I did not like. My friend suggested that if there were some things going on which did not seem right to me I ought to get into the association with the feeling that I could do more on the inside than on the outside. Gentlemen, I have not been sorry that I joined my association."

During the afternoon the election of officers and directors was held, and Mr. Chapman installed his successor, H. W. Strader. Mr. Strader said: "This is not a one-man job. If you will all support me I promise there will be something done in the state association this year."

Following are the resolutions offered by the resolutions committee and concurred in by the convention. The customary resolutions expressing the appreciation of the convention for the courtesy shown by the St. Paul group and to the ladies for their expression of good will. An important resolution was that which instructed the board of directors through its proper officers to incorporate the association as a co-operative association. Also a resolution endorsing instruction in plumbing in the Dunwoodie Institute, to be in the form of a short-course for plumbers during January and February. Also a resolution pledging the support of the association for the passage of legislation to prohibit the discharging of raw sewage into the waters of the state of Minnesota.

The Time Payment Plan

Mr. Chapman, speaking as retiring president, favored the setting up of small groups of members in various places, these groups to take on the work of lining up new members. Then, when that group has someone in the mood to join, an officer of the state association to go, perhaps with other members, to sell the idea of membership.

On the subject of time payments, Mr. Chapman said: "Tomorrow we will have an educational meeting, and one of the things to be discussed will be the time payment plan. I think it is a thing we should all take an interest in. There is a question in some of our minds whether or not it is good business to have wholesale houses connected with the finance plan. It is something to think about. We feel that we should not criticize any wholesale house for offering us a finance plan; the fact is, that we as retailers have not done anything to

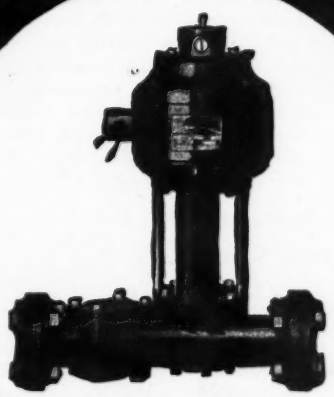
H. W. Jacobsen of Peerless Northern Co. and C. G. Hurskey of Weil-McLain Co., Michigan City, Ind.; Larry Humwell of Standard Sanitary Mfg. Co., Minneapolis; George Quest of Blake Specialty Co., Rock Island, Ill. Photos taken at the convention of the Minnesota Retail Plumbers' Association

Every Truly Up-to-Date Hot Water System Has A HYDROLATOR

For New Jobs

Very rapidly the entire heating industry is learning that no hot water heating job is complete or modern unless HYDROLATOR-equipped.

The positive, *forced* circulation made possible by the HYDROLATOR eliminates practically all possibility for sluggish or inefficient systems. When you put in a HYDROLATOR, you *know* that the job is going to work.



For "Sick" Jobs

No longer is there any excuse or necessity for "sick" hot water systems. The HYDROLATOR provides a quick, sure and inexpensive cure. It overcomes traps, short-circuits, pipe restrictions, etc.

As a good-will builder, the HYDROLATOR knows few rivals. Install ONE — and MANY more sales will follow.

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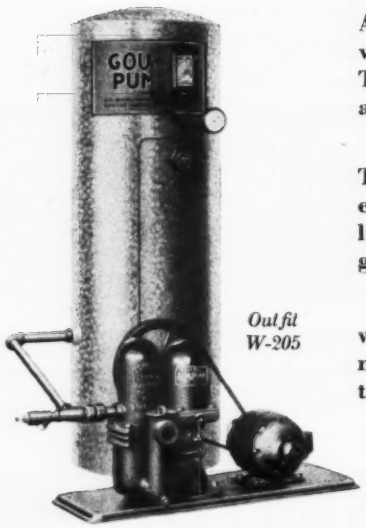
A Complete Line of EVER-OILED Water Systems —*for Trouble-Free Service*



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WHEN you install a Goulds Ever-Oiled Water System, you are sure of the trouble-free service it will give. All the advantages of the popular Goulds W-40 Ever-Oiled water system are now available for every home water service. The complete line includes twelve systems of various sizes and styles.

All are designed for economical, trouble-free operation. The ball-bearing pumps never need attention; they never even need oiling. The bearings are all sealed in grease — lubricated for life. And the pumps are unconditionally guaranteed for two years against trouble of any kind.

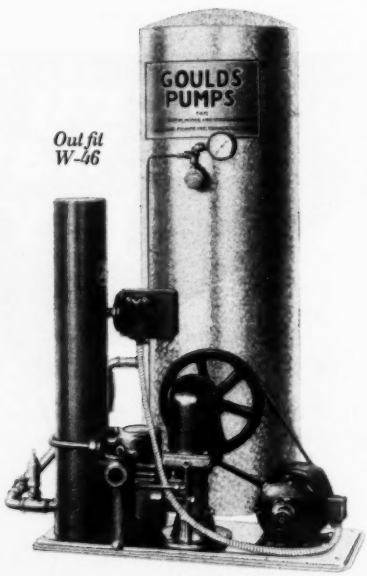
Selling for $72 to $135, these water systems include a variety of electric and engine-driven outfits, to help you meet the present-day demand for dependable, economical trouble-free water systems.

EVER-OILED Outfit W-205

Complete pressure-tank system. Supplied with pressure switch and relief valve and with 42-gallon galvanized iron tank, together with connecting pipe and fittings and automatic air-volume control. It has a capacity of 210 gallons an hour and sells for $104 complete. It is driven by ¼-h.p. electric motor and is fully automatic.

EVER-OILED Outfit W-46

Combination fresh-water and pressure-tank system. Supplies fresh, cold drinking water direct from well or spring to faucet. Water for general house supply is taken from storage tank. It has a capacity of 210 gallons an hour and sells for $105. Includes ¼-h.p. electric motor, a.c. or d.c., 42-gallon galvanized tank with fittings and pressed-steel base for pump and motor. Automatic air-volume control, electric pressure switch, and all necessary accessories.



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GOULDS EVER-OILED WATER SYSTEMS

help ourselves in this direction. The finance business is here upon us. We should not criticize any wholesale house for presenting to us a finance plan, so long as we have not one of our own. They are not in competition with us on the finance plan.

"I do not believe it is good business for you to go to a wholesale house and ask them to finance your job on one hand, and ask them for the price for materials on the other. But I do not think it is good business to criticize them when we have not found a way out for that kind of paper ourselves."

On the subject of association work, Mr. Chapman said: "I think the time is gone when you can have a man spend his time in association work without being paid for it. It is time to pay the man who does that work, whether he is your president or a paid secretary."

Following Mr. Chapman on the floor, Axel Peterson of St. Paul, a past state president, said: "I criticize the time payment plan from this angle: Just as soon as the wholesaler links up his wholesaling with the time payment plan, he is acting both as your wholesaler and as your financier. I maintain that every man in business should be so situated with his credit that he can take care of any kind of commercial paper that comes up in the course of his business. If he is not so situated, he has no right to that credit in excess of his actual capital. In other words, if you have $10,000 capital, $8,000 of which is tied up in stock, tools, etc., and only a thousand or so left, it is nothing more than a contingency fund. Unless you have other assets against which you can borrow money for jobs, you have no right to credit. Go to the bank and get the money—the banker is the man who knows what credit is and means. He will not lend you money unless you have that credit."

F. A. Beier of St. Paul, a national director, said on this subject: "Time payment business is going to be something we can not overlook, and if the wholesalers are going to handle that business, they are not only going into the financing business, but it is an entering wedge to go into the retail business. If we can not handle that kind of business ourselves, we are not retailers. Do not expect too much aid from the wholesaler in getting your business. You are the retailer, and it is your business to get."

Educational Program

H. Merwin Porter of Minneapolis struck the keynote for the educational program when he said: "We have not been as close as we ought to be in the cooperation of all groups. We ought to get together and try to understand one another better than has been the case in the past. There is a good future ahead for this state. I think periodical meetings between the different groups would tend to help conditions. There is a tendency to stay away from such meetings, but we ought to go away from this meeting today in a different mood, and take a little different view of the subject."

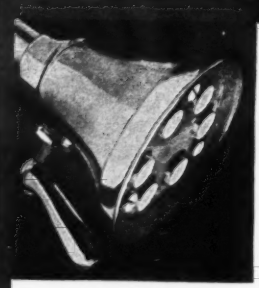
The chair then called on D. R. Thomas, manager of the Central Western Credit Bureau, to introduce F. A. Swanson, president and commissioner of the Plumbing and Heating Institute. Mr. Swanson explained to the convention the workings of the rules set up by the trade practice conference, stressing the fact that these rules as between manufacturers and wholesalers were to the benefit of the contractors. Mr. Swanson's message has been reported fully in previous issues of DOMESTIC ENGINEERING.

As reported earlier, a resolution was introduced and passed authorizing the new officers and board to take steps toward the incorporation of the state association as a co-operative corporation. As explained by Mr. Hay, who is deputy commissioner of agriculture for the state, this is a form of corporation, set up under the Minnesota laws, which permits a very wide liberty of group action. The Minnesota laws in this respect are much more liberal than in most states and a great number of such co-operative corporations have been formed.

Visiting Speakers

Among the visitors from Wisconsin were Louis Friend of Milwaukee, state president, Jacob Schuh of Milwau-

At left: H. Merwin Porter of Minneapolis. Center: Fred A. Beier, of St. Paul, national director. Right: V. L. Penvy, secretary of Heating and Piping Contractors Association



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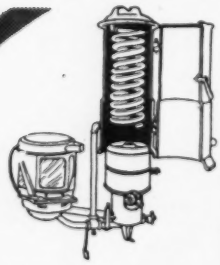

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R. O. Bartingale of Eau Claire, Wis.; Jacob Schuh of Milwaukee, Axel Peterson of St. Paul and Louis R. Friend, of Milwaukee, president of the Wisconsin association. Photos taken at the convention of the Minnesota Retail Plumbers' Association

kee, H. C. Bergrud and R. O. Bartingale of Eau Claire. The chair called on Mr. Friend who described the plumbing laws of Wisconsin. He went into some detail concerning the plan for using traveling instructors for trade schools under the Smith-Hughes act, stating that Wisconsin probably receives the largest sum under this act for trade instruction in the country. In commenting on state association conditions, Mr. Friend urged the locals to "keep house" for themselves and not to expect the state officers to do too much in keeping local matters in shape. Mr. Schuh, who is president of the insurance company set up by the Wisconsin organization, described the workings of the company. He felt that it gave the members a financial stake in their association and so had a tendency to hold them. The company has been able to return 60 to 70 per cent of the premiums paid, in the form of dividends which are paid over a term of years so that the company has a sufficient reserve fund to meet all contingencies.

V. L. Peavy, who is manager for the heating and piping groups both in St. Paul and in Minneapolis, took the floor to make a detailed explanation of the certified heating plan, pointing out that it was primarily a merchandising idea, although it served likewise to assure the public of a correct heating job.

Russell G. Creviston, sales promotion manager of Crane Co., Chicago, traced the swift growth of the United States in the last twenty-five years, pointing out the great wealth and wealth-producing facilities of the country. Following are the economic factors which he assigned as causes for America's prosperity: The application of great energy and the display of an indomitable courage and great resourcefulness on the part of all our people; mass production and public ownership of the established units of commerce, industry and finance; an enormous increase in our productivity and efficiency; the strength and stability of our national financial system under the federal reserve act; the establishment of

Ben Benson of Wilmar, Mr. and Mrs. Charles J. Olson of Winona, Minn. Photos taken at the convention of the Minnesota Retail Plumbers' Association

a sound system of partial payments; more general co-operation between management and men and between corporations and their clients and stockholders; better co-operation between government and business; the establishment of the highest standards of living ever known and enjoyed in all the world.

"The wide-awake distributor," said Mr. Creviston, "not only knows his market and the people who compose it, but is alert to every improvement in getting his service and product to the public. He must be a student of the changes which economic pressure, science and invention are making in the habits and customs of the public." He indicated the necessity for creative selling in building up the replacement market as against any attempt to force the new construction market, which must be governed by our increase in population and the needs of our growing industries. Any attempt to force this latter market would result in a merely temporary gain and result in over supplied conditions which would depress real estate values and demoralize the whole industry.

C. R. Warner of Standard Sanitary Manufacturing Co., urged those present to concentrate on the home modernizing idea. He felt it was time to push colored ware, and to sell plumbing materials on the time payment plan. "1930," he said, "will not be a good year for new building; but it will be a good year for replacements." He urged the need for modern merchandising methods.

On the motion of H. C. Ridler, state treasurer, the meeting closed with a rising vote of thanks to the retiring officers. The second evening of the convention was given over to a highly successful banquet and dance in the ball room of the Lowry Hotel.

◆

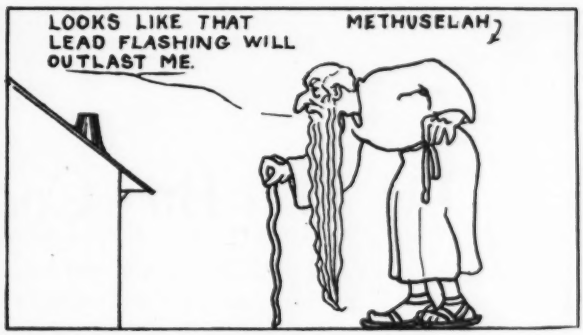
Hold Annual Beefsteak Dinner

The Master Plumbers' Association Division No. 2 of Manhattan, New York City, held its annual beefsteak dinner on February 5. While for many years this yearly gathering has been strictly a stag affair, this year ladies were guests and it was converted into a dinner-dance. There were practically 400 present to enjoy the dinner, entertainment and dancing, among whom were representatives from each of the other borough organizations throughout Greater New York. Preparations were concluded by Joseph R. Spellman, who as chairman of the committee was assisted by Henry Berg; Nathan Weinstein; Harry Segel; Andrew I. Green; Herbert Halloran; Malcolm Walsh; Ellis Jungman; F. Solomon, and Michael L. Cregan.

◆

Bridgeport, Conn., Masters Elect Officers

At a meeting of the Master Plumbers' Association of Bridgeport, Conn., held on January 31 in the association headquarters, William O'Dwyer was elected president; Adolph G. Pitz, vice president; Robert T. Rock, treasurer; Lester E. Finch, secretary, and Otto J. Ladwig, sergeant-at-arms. Wilbur J. Wade was made chairman of the office committee, on which will serve C. W. Carlson, L. J. Hatch, Mr. Pitz, and Joseph F. Mongrain, who was also made trustee for a three year term. The conference committee, which was also named, is composed of F. C. Booth, chairman; Joseph J. Mullens, William A. Reilly, William P. Kirk, and Mr. Wade.



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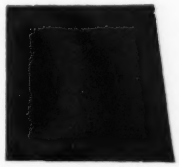

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Your profit is generous.

DECATUR PUMP CO.

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Originators and Exclusive Manufacturers of Burks Turbine-Type Pumps That Pump Air!

Do You Buy Coal by the "Stone"?

A GLANCE at a few old-fashioned standards discloses such examples as a "stone" for the measure of weight, a "hand" as the measure of height, and a "barley-corn" as a measure of length.

The "foot" was once the length of the "pedal extremity" of the ruling chief of a tribe and when a new chief arose, the "foot" was altered to equal that of the new ruler.

How many merchants today would buy lumber measured by a "foot" which might be ten inches or thirteen inches long? Or coal measured by a "stone" the exact size of which is not known?

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West Virginia to Set Up Zone Organizations

R. H. Holtzworth of Huntington Elected President

R. H. Holtzworth, newly elected president

THE Master Plumbers' Association of West Virginia held its seventh annual convention at the Waldo hotel, Clarksburg, on February 3 and 4, with a good attendance present from all sections of the state. The convention program was well-balanced, with talks on merchandising, technical subjects, association work and present-day business problems coming in for discussion.

The convention was called to order by M. L. McGraw, president of the Clarksburg association. After the singing of "America," the invocation was pronounced by the Reverend R. N. Shaffer. Judge Karl B. Kyle of Clarksburg welcomed the delegates to the city, and George W. Redeker of Wheeling also addressed the members and guests at the opening session.

New Officers Are Elected

R. H. Holtzworth of Huntington, vice president of the association, was elevated to the office of president, succeeding Henry A. Spencer of Clarksburg. S. O. Johnson of Parkersburg was elected vice president and C. B. Swan of Huntington was elected secretary-treasurer.

C. A. McMunn of Clarksburg, F. J. Eichert of Welch, John A. Shanklin of Charleston, George W. Redeker of Wheeling and H. C. Hammond of Martinsburg were elected directors. Next year's convention is to be held at Parkersburg.

President Spencer appointed the following committees to handle the convention's business:

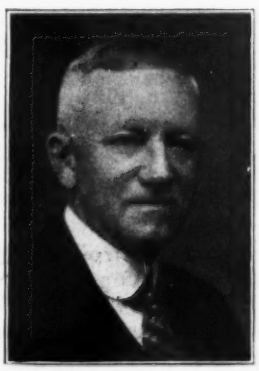
Credentials—Henry Keyser of Beckley and John H. Druen of Huntington.

Resolutions—F. C. Welch of Clarksburg, John A. Shanklin of Charleston, George W. Redeker of Wheeling, F. J. Eichert of Welch and R. H. Holtzworth of Martinsburg.

Auditing—M. L. McGraw of Clarksburg, C. A. Mumford of Fairmont and H. C. Hammond of Martinsburg.

George H. Werner of Orange, N. J., a director of the National Association of Master Plumbers, was the official representative of that organization at the convention, and he took an active part in the program. Mr. Werner referred to the passing of John A. Quinn and of the work that the late president had done for the plumbing and heating industry. The entire membership stood in silence for a few moments in tribute to Mr. Quinn.

The speaker read a communication from George H. Drake, president of the Plumbing and Heating Industries Bureau, which told of the activities and plans of that organization. He also read a communication from the exposition committee of the National association



George H. Werner

Henry A. Spencer, retiring president

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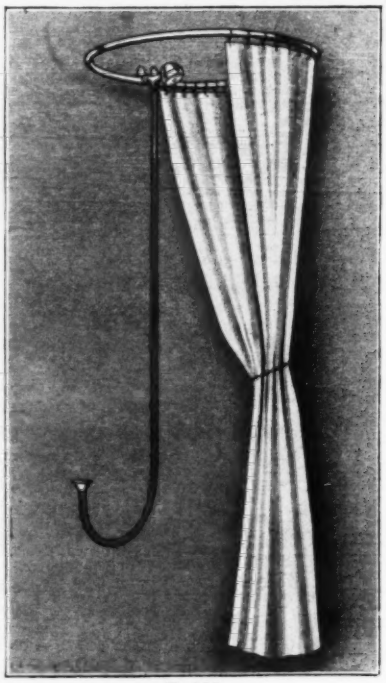

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A boiler with which you can outsell the unlicensed plumber.

Write for literature giving us the name of your jobber—

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which outlined plans for the forthcoming National convention, to be held at Boston. Mr. Werner told in some detail of the zone system used in New Jersey and suggested that a similar plan be tried in the state of West Virginia. He explained that under this plan three or four towns in close proximity to each other meet once a month at one of the towns. This, he pointed out, brings about a better attendance and keeps up the interest of the members.

At the conclusion of Mr. Werner's talk, John A. Shanklin moved that the state be divided into zones by the president, with a chairman in charge of each zone. The motion was carried.

Another speaker at the convention was A. R. McGonegal, chief plumbing inspector of Washington, D. C., who told something of the work his department is doing.

Hear C. W. Wanger

One of the principal speakers at the meeting was C. W. Wanger, president of the Woodward-Wanger Co., Philadelphia, Pa. Mr. Wanger talked on problems confronting the industry and modern merchan-

George W. Redeker

dising methods. His talk was very well received and the suggestion was made that copies of it be secured and distributed to the members of the state association.

He told of the steps he would take if he were entering the business as a master plumber. First, he said, he would set up a complete set of books, as he feels this is one of the most important factors in conducting a business. Mr. Wanger said his next move would be to make a careful survey of the neighborhood in order to determine the section containing the largest number of home owners. The names of these home owners, their incomes, etc., should then be determined, he said, and sales literature should be directed to them according to their incomes. He pointed to the necessity of following-up this mail literature with personal calls upon the prospect. Mr. Wanger feels that one of the greatest weaknesses in the sales efforts of the various branches of the industry is lack of contact with the customer.

Mr. Wanger cited some figures from a governmental department, showing that 65 per cent of the retail failures are due to a lack of merchandising knowledge, and that only 1 per cent of the retail failures are due to competition.

V. A. Rogerson, manager of the Retail Credit

Association of Clarksburg, addressed the convention on the subject of credit.

Resolutions Nos. 1, 5, 9, 10 and 13 as adopted at the Buffalo convention of the National Association of Master Plumbers were concurred in by the resolutions committee, and adopted. Resolutions Nos. 1, 2 and 3, as adopted at the last national convention, were made into one resolution and adopted by the West Virginia association.

The annual banquet was held on the evening of the last day of the meeting, with John Henry acting as master of ceremonies. Music was furnished by the hotel orchestra. Mr. Wanger talked at the banquet on the importance of the journeyman as a means of contact between the master plumber and his customers. On Monday evening there was a dance in the ball room of the hotel.

◆

Fairfield Association Holds Meeting

The Master Plumbers' Association of Fairfield County, Conn., at a recent dinner meeting, in the Hollyhock Inn, South Wilton, Conn., heard a report from its field secretary, B. Joseph O'Donnell, with reference to the organization work he has been doing since taking up his duties with the organization. The meeting, which drew a large attendance, was conducted by President Harry Nathan of South Norwalk. Preparations for the dinner, which was attended by the families of the members, were made by Charles Weitzel of Wilton.

◆

Birmingham Association Elects Officers

The Birmingham (Ala.) Association of Master Plumbers held its annual meeting and election of officers the first week in January and re-elected S. E. Scholze for his fourth year as president. Other officers are R. C. Parker, vice president; W. O. Merrill, secretary; J. H. Hamill, treasurer, and Guy Acton, sergeant-at-arms.

Mr. Scholze, who is also president of the state association, states that the local association is preparing to entertain state delegates at the annual convention to be held in Birmingham in May. He has spent much of his time in the past few years traveling over the state in organization work.

◆

Pennsylvania Masters Hold Educational Meeting at Johnstown

Responding to a call sent out by David S. Sanderson, president of the Pennsylvania Association of Master Plumbers, an overflow crowd from the western section of the state met in the ballroom of the Fort Stanwix hotel, Johnstown, Pa., on January 24, to be present at the first of a series of educational meetings that are to be held. President Sanderson, in collaboration with C. W. Wanger, president of Woodward-Wanger Co., Philadelphia, appreciating that it would be too much to expect all the master plumbers in the state to meet at intervals in various cities, has planned that sales demonstrations patterned after those presented by Mr. Wanger at the national convention in Buffalo, N. Y., last June shall be given in limited areas from time to time.

Following a formal introduction by President Sanderson, Mr. Wanger in addressing the gathering pointed out that the effort being put forth was to demonstrate,

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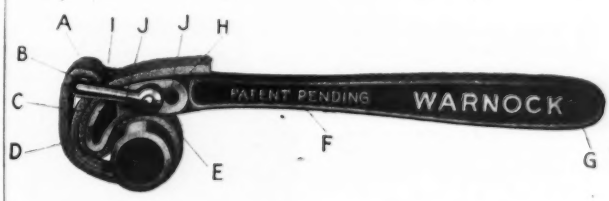

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PRODUCTS BRASS TRENTON

SINK PLUG FITTING

You'll find Trenton Sink Plugs of heavy, durable construction, perfectly machined and threaded. To be sure of Trenton quality, insist upon the name.

The Trenton Brass & Machine Co.
Trenton New Jersey

Represented by
ROLLIN C. WILSON
7 E. 42nd St.
New York, N. Y.
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Copper Tubing Cuts 33⅓% from the Labor Cost of Installing Oil Burners

Send for prices on "Extra Heavy Tube"
Also Specifications on "Unit Heaters"

WOLVERINE TUBE CO.

SEAMLESS COPPER BRASS & ALUMINUM

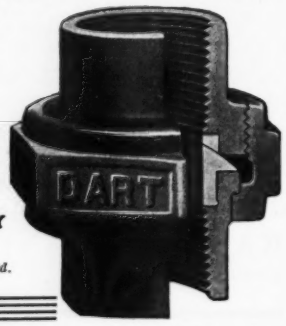
1417 Central Ave. Detroit, Mich.

TWO BRONZE SEATS

When you see the way Dart Unions last and last, without leaking, you'll know the importance of the TWO BRONZE SEATS.

And you'll appreciate, too, that extra strength in the heavy nut and shoulders.

Use Dart Unions!



E. M. DART MFG. COMPANY
Providence, R. I.
The Fairbanks Company, Sales Agents
Canadian Factory, Dart Union Company, Ltd.
Toronto, Canada

SEVENTY-FIVE years' intimate experience with piping in all its phases is responsible for outstanding quality of Grinnell fabricating service.

GRINNELL COMPANY

Address inquiries to Providence, R. I.

The Torch You Need

GAS-O-LITE

The Gas-O-Lite Torch will save your time, money and patience. It gives eight times the light of a candle, is cheaper and more efficient to use and does away with messy, dripping wax. Burns two to three hours with one filling of gasoline. Safe!

Ask your jobber for it by name. If he does not stock it yet, write us.

LITTER TORCH CO.
Meriden :: Conn.

as nearly as possible under actual conditions, salesmanship and in so doing, those things that should be done and those that should not be done to conclude a successful sale. Mr. Wanger also outlined the plans for the educational program that is to be offered at the national convention in Boston next June.

Howard S. Thrasher, business manager of the Philadelphia Plumbing and Heating Development League, gave a pointed talk on bookkeeping in which he discussed pertinent facts concerning this important factor in good business. Mr. Thrasher, by way of illustrating the neglect bookkeeping suffers, quoted government figures which disclosed that 50 per cent of the concerns in business do not know their costs; 40 per cent of those making estimates do not keep cost records, and only 10 per cent know their costs.

Mr. Wanger, in preparation for the sales demonstration, introduced Mrs. F. J. O'Brien, who assumed the part of a housewife. Her husband's income was around $5,000 a year and they had two young children. James Dwyer, sales manager of Crane Co.'s Philadelphia branch, assuming the role of a master plumber who some days previously had done a small repair job, called to sell a new kitchen sink. This illustration was followed by others offered by Walter Kaufman of the Philadelphia branch of Standard Sanitary Mfg. Co. and M. Weil of Bailett Co., who as master plumbers, endeavored to sell Mrs. O'Brien a dishwasher and a gas water heater, respectively. Each of these efforts was met with different kinds of sales resistance on the part of the prospective customer, which the salesmen in each of the three cases tried to overcome with substantial sales arguments and in so doing gave the audience ideas on approach, sales methods, the presentation of sales arguments, etc. Each demonstration was followed by a constructive, critical talk from Prof. John R. Whitaker of the merchandising department of the Wharton school, Philadelphia, who emphasized the need of proper approach, voice control, etc.

Late in the afternoon, reviewing the day's program, Mr. Wanger urged each man to consider well what had been witnessed and the application of it to his business. In the evening, the visitors were entertained at a dinner dance and card party. The Johnstown association as a body worked hard to make the undertaking the success that it was pronounced by many of those present. Plans are now being formulated by the state president and Mr. Wanger for the next meeting.

◆

Utah County Association Elects Officers

The Utah County, Utah, Association of Sanitary and Heating Engineers, with increased membership containing approximately ninety-five per cent of the masters of that district and with a broad program of general betterment, is looking forward to a successful year in 1930, according to Earl Blumenthal of Provo, secretary of the organization.

The following officers have just been elected: Alex Mortensen, Provo, president; Samuel Grant, American Fork, first vice president; Frank Kerr, Payson, second vice president; Mr. Blumenthal, secretary, and E. O. Moe, Provo, treasurer.

Mr. Mortensen, the new chief executive, is a veteran

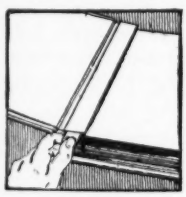
THE HANDY SPEEDLOK
Domestic Engineering Catalog Binder

Especially designed for the standardized catalog page adopted by the plumbing and heating industries

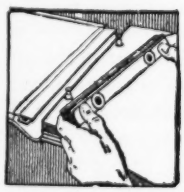
The SPEEDLOK is a quick operating catalog binder designed to fit reprints of catalog pages in "Domestic Engineering Plumbing and Heating Catalog" as well as all other catalog pages that conform to the standards adopted by the plumbing and heating industries.

Easy and speedy operation are special features of this binder. A slight pull on the concealed bar under the top cover unlocks mechanism when sheets are inserted. Equipped with bar for removing sheets when changes are made.

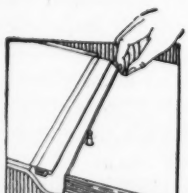
Minimum capacity 1¼ inches. By simply unscrewing extension posts capacity can be extended to 2¼ inches. Works perfectly for all requirements—either a few sheets or filled to capacity.



Covers are bound in heavy black Levant Grained Fabricoid, semi-flexible, very durable and attractive looking.

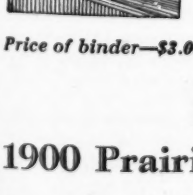


To unlock Binder—Pull out slide bar in top wing. Top cover will immediately fall back.



To lock Binder—bring top wing back over the posts—be sure posts fit in the holes in the top wing—then push in slide bar.

Separate the sheets where desired and slip sheets off the posts. Take out sheets or put in new ones as desired. These three moves take but a few seconds. Each operation is a natural one.



To increase or to decrease the capacity of the binder is a simple operation. The two posts are so constructed that they can be easily raised or lowered to meet the height requirements. Binder posts can be extended from 1¼ inches to 2¼ inches.

Price of binder—$3.00. Prices on quantities on application.

For Plumbing and Heating Contractors—

Many master plumbers and steamfitters assemble working catalogs from standardized catalog sheets filed in binders.

Domestic Engineering is in position to furnish without charge, upon request, loose sheets—which are reprints from catalog pages appearing in "Domestic Engineering Plumbing and Heating Catalog"— of several hundred manufacturers. They are standard catalog page size — 10⅝ x 8½ inches — are printed on a good grade of light paper and punched according to the standard adopted by the plumbing and heating industries. These sheets fit the SPEEDLOK binder.

For Jobbers' Salesmen—

The loose-leaf system reduces to the minimum the bulk and weight of catalog material required by the salesman. Only matter actually required for selling purposes need be carried in the binder. It does away with the necessity of carrying entire catalogs, booklets and circulars of various sizes and shapes.

Salesmen using the loose-leaf system have a great advantage over men not using this equipment—to say nothing of the added convenience, time and labor-saving features.

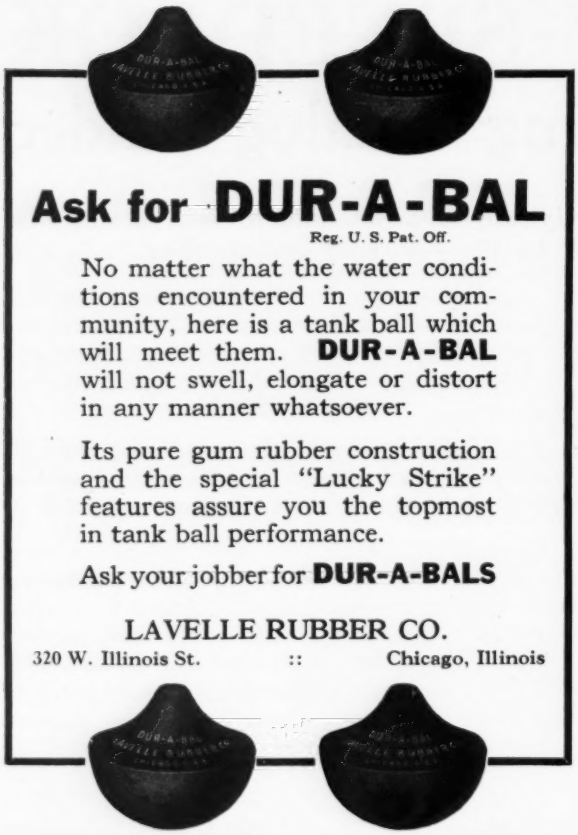
With a modernly equipped loose-leaf binder, the salesman can present his products in a more comprehensive manner than it is possible to accomplish by the old methods. Having all his material up to date in compact form and easily available, he can show latest specifications, answer questions or quote prices more readily.

When orders for binders are accompanied by requests for catalog reprints the binders will be equipped with the sheets desired and shipped complete.

Write for full details regarding loose sheets and binders.

DOMESTIC ENGINEERING

1900 Prairie Avenue *(Catalog Department)* **Chicago, Illinois**


Ask for DUR-A-BAL
Reg. U. S. Pat. Off.
No matter what the water conditions encountered in your community, here is a tank ball which will meet them. DUR-A-BAL will not swell, elongate or distort in any manner whatsoever.
Its pure gum rubber construction and the special "Lucky Strike" features assure you the topmost in tank ball performance.
Ask your jobber for DUR-A-BALS
LAVELLE RUBBER CO.
320 W. Illinois St. :: Chicago, Illinois

contractor with extensive association experience, having served as vice president of the Utah State Association of Sanitary and Heating Engineers since 1924.

The Utah county organization, which is one of the active units of the Utah state association, now has the following members: Provo, J. M. Baker, H. G. Blumenthal Co., Buckley & Haws, E. L. Carter, P. L. Larson, E. O. Moe and Alex Mortensen; E. K. Ferguson, Spanish Fork; Samuel Grant and Walter Slack, American Fork, and Morgan S. Lott at Lehi.

◆

North Dakota Sets Convention Date

Rasmus Lunseth

The State Association of Master Plumbers of North Dakota has voted to hold its next annual convention on March 4 and 5, 1930, at Minot, North Dakota, at which time officers for the coming year will be elected. Rasmus Lunseth of Grand Forks, is president of the North Dakota association, and Joseph Keller of Fargo, is secretary.

◆

San Francisco P. & H. Club Discusses Co-Operation

The Plumbing and Heating Club of San Francisco, Calif., and Bay Cities discussed ways to improve the relationship between the manufacturer, wholesaler and master plumber at its first meeting of the year, held at the Elks Club in San Francisco, January 16. After making the opening address, President J. V. Young turned the meeting over to J. J. McLeod, who acted as chairman of the occasion. Mr. McLeod, in turn, introduced the first speaker, Joseph Ahlbach of San Francisco, a past president of the club.

"Merchandising today is the all important part of the plumbing business," began Mr. Ahlbach. "The manufacturers are producing in enormous quantities and we must dispose of their products. New work is not plentiful; therefore, we must look to replacement work as a medium of outlet." Basing his argument on the necessity for a more intimate bond of co-operation in such vital matters as advertising in the local press by manufacturers and their willingness to work with the master plumbers with respect to furnishing leads, the speaker cited examples of manufacturer-dealer teamwork in radio, furniture, automobile and allied lines. "As I see it, these people work more effectively because they have established far better contacts between the various branches of their respective industries."

Mr. Ahlbach then went into considerable detail regarding the matter of co-operative advertising. "The question of advertising—in other words, securing leads—is a serious one," he said. "We can not hope to solve it as individuals, so what can we do about it?"

L. J. Kruse of Berkeley and past president of the California state association, touching on the matter of association work, said: "In spite of the seemingly adverse business conditions, we have today the largest and

best organization in the history of the state association." This is due largely, continued the speaker, to the efforts of the state secretary, Charles Hutton, along this direction.

Deploring the cessation of activities on the part of the Plumbing and Heating Industries Bureau, Mr. Kruse spoke of the accomplishments of the bureau's field men in the past, and expressed the hope that efforts in other directions as well as the policies recently adopted by separate branches of the industry would compensate in part for the lack of men in the field.

"I don't believe the average manufacturer or wholesaler really has his hand on the pulse of the plumber," said Mr. Kruse, and cited an example of this lack of support and sympathy in the direction of constructive progress. Speaking of business prospects for the coming year he said that in all probability there will be no volume of new building such as that of the past 12 months, "therefore, the plumber must be prepared to go out and create new business."

Convention Dates

March 4 and 5, 1930—NORTH DAKOTA—The annual convention of State Association of Master Plumbers of North Dakota, to be held at Minot, North Dakota.

March 10 and 11, 1930—KANSAS—The annual convention of the Kansas Master Plumbers' Association, to be held at Salina, with headquarters at the Hotel Clayton.

March 10, 11 and 12, 1930.—INDIANA—The thirty-fourth annual convention of the Indiana Society of Sanitary Engineers, to be held at Fort Wayne, with headquarters at the Hotel Anthony.

March 11 and 12, 1930—MAINE—The annual convention of the Maine State Master Plumbers' Association, to be held at the Falmouth hotel, Portland..

March 17 and 18, 1930—MISSOURI—The annual convention of the Missouri State Association of Master Plumbers, to be held in St. Louis, with headquarters at the Hotel Statler.

March 19 and 20, 1930—NEBRASKA—The annual convention of the Nebraska Master Plumbers Association, to be held at Lincoln, with headquarters at the Cornhusker hotel.

March 25 and 26, 1930.—C. S. A.—The 104th regular meeting of the Central Supply Association, to be held at the Palmer House, Chicago.

March 25, 26 and 27, 1930—MICHIGAN—The annual convention of the Michigan State Association of Master Plumbers, to be held at the Hotel Hayes, Jackson, Mich.

April 7 and 8, 1930.—ARKANSAS—The annual convention of the Arkansas Master Plumbers' Association, to be held at Fort Smith.

April 7 to 12, 1930.—AMERICAN OIL BURNER ASSOCIATION—The seventh annual convention and exposition of the American Oil Burner Association, to be held at the Stevens Hotel, Chicago, Ill.

April 8 and 9, 1930—NEW YORK—The annual convention of the New York State Master Plumbers' Association, to be held in New York City, with headquarters at the Hotel Pennsylvania.

April 21 and 22, 1930.—COLORADO—The annual convention of the Colorado Society of Sanitary and Heating Engineers, to be held at Denver, with headquarters at the Hotel Albany.

April 25 and 26, 1930—LOUISIANA-MISSISSIPPI—The annual convention of the Louisiana-Mississippi Association of Plumbing and Heating Dealers to be held at Shreveport, La., with headquarters at the Washington Hotel.

May 5 and 6, 1930.—FLORIDA—The ninth annual convention of the Florida Association of Master Plumbers and Heating Dealers, Inc., to be held at Bradenton.

May 5, 6 and 7, 1930—N. P. S. A.—The annual convention of the National Pipe & Supplies Association, to be held at Pinehurst, N. C., with headquarters at the Carolina hotel.

May 12 and 13, 1930.—OKLAHOMA—The annual convention of the Oklahoma State Association of Master Plumbers, to be

ENTERPRISE
Brass Products

Utility and Sturdiness

Today's buildings are demanding new touches in plumbing beauty. Every Enterprise brass product is made to meet this demand in every fine particular. . . .

But what is more important than beauty is the lasting qualities which Enterprise has built into every item that bears its name.

Whether it's tank trimming or faucets or any other item of plumbers' brass goods, you're safe on the important counts of utility and sturdiness when you insist upon and sell Enterprise.

Next to the unfailing performance of Enterprise products, you'll like the reasonableness of their price. May we send you further details, or suggest that you ask your jobber?

Enterprise Brass Works
Muskegon :: Michigan

held at Shawnee, with headquarters at the Hotel Hilton Phillips.

May 12, 13, 14, 15 and 16, 1930—CALIFORNIA—The annual convention of the State Association of Master Plumbers of California, to be held at Sacramento. Convention headquarters will be at the Hotel Senator.

May 13 and 14, 1930.—CONNECTICUT—The fortieth annual convention of the Master Plumbers' Association of Connecticut, Inc., to be held at Hartford.

May 13 and 14, 1930—NEW JERSEY—The annual convention of the New Jersey State Association of Master Plumbers, to be held at the Woodrow Wilson hotel, New Brunswick, N. J.

May 19 and 20, 1930.—ALABAMA—The annual convention of the Alabama Master Plumbers Association, to be held at Birmingham, with headquarters at the Bankhead-Leland hotel.

May 19-20, 1930—TENNESSEE—The annual convention of the Associated Master Plumbers of Tennessee, to be held at Chattanooga, with headquarters at the Hotel Patten.

May 19, 20 and 21, 1930—PENNSYLVANIA—The annual convention of the Pennsylvania Master Plumbers' Association, to be held at the Bellevue-Stratford hotel, Philadelphia.

June 24, 25 and 26, 1930—N. A. M. P.—The forty-eighth annual convention of the National Association of Master Plumbers, at Boston, Mass. Sessions at Grand Hall of Mechanics Building. Headquarters at Statler Hotel.

COMING TRADE EVENTS

February 26, 1930—The annual banquet and dance of the Association of Master Plumbers of Baltimore City, Inc., Baltimore, Md., to be held at Lehmann's hall.

February 27, 1930—The annual banquet of the Master Plumbers' Association of Jersey City, N. J.

March 3-7, 1930—The first showing of the National Industrial Exposition, to be held at the Hotel Stevens, Chicago.

June 23-27, 1930—Exposition in connection with the annual convention of the National Association of Master Plumbers, in the Mechanics Building, Boston, Mass.

Savannah, Ga., Association Elects Officers

The Savannah Plumbing & Heating Contractors Association of Savannah, Ga., at its first regular meeting of the year, re-elected the following officers for the new year: J. F. Fitzpatrick, president; J. H. Garwes, vice president; S. N. Boyd, treasurer; and F. E. Lewis, executive secretary.

The board of governors was also re-elected and includes: J. F. Fitzpatrick, S. N. Boyd, J. H. Garwes, O. A. Kimball, J. C. Humphrey, E. A. Masters and A. C. Mitchell.

F. E. Lewis

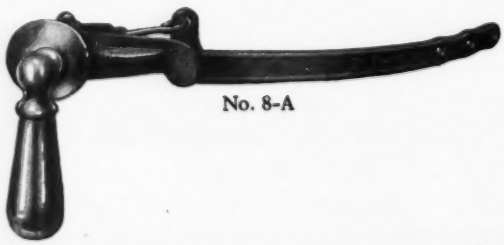
The executive secretary, Mr. Lewis, in an address delivered to the association, said in part, "This association is a service institution pure and simple; when we use it for purely selfish gains we have lost the basic principle upon which it is organized." . . . "the association can do a lot for you: it is an organization established to help you with your problems; its strength is your strength, let's boost it and find out what it means to us."

The Savannah association meets regularly and Executive Secretary Lewis reports a good attendance at all the gatherings, with a lively interest manifest.

M-VB

CLOSET TANK FITTINGS

COLOR and CHROMIUM



No. 8-A

The effect of colored or tinted china and enameled ware can be greatly enhanced by the use of chromium fittings. The closet tank, for example, in any tint, or even white for that matter, appears to have just a dash of the unusual if the lever handle is all metal and chromium plated. Of course, if the lever used is an M-VB No. 8-A then the result is unusual—in design, finish and trouble-free operation.

M-VB Chromium Levers solve the color matching problem of replacement work.

Made by

SCOVILL MANUFACTURING CO.

Morency-Van Buren Division

STURGIS, MICHIGAN

Questions

ASKED BY READERS AND ANSWERED BY EXPERTS

About Heat from Steam at Various Pressures

Editor, DOMESTIC ENGINEERING:—We have had several arguments here concerning pressure carried on heating jobs. We are not agreed on heat transmitted from radiators at different pressures. How much less radiation can be used in a room with 10 lb. pressure than can be used with 2 lb. pressure and still heat room to the same temperature?

Michigan. C. J. F.

The temperature of steam in a radiator, and consequently the temperature of the radiator itself, is dependent upon the pressure under which the steam is confined. The temperature of steam under normal atmospheric conditions or zero pounds per square inch gage pressure is 212 deg. Fahr. When the pressure is raised to 2 pounds per square inch gage pressure or 16.697 pounds per square inch absolute pressure, the temperature of the steam becomes 218.5 degrees Fahr. Correspondingly, at ten pounds per square inch gage pressure the steam is 239.4 degrees Fahr.

The amount of heat given off by radiation per unit of time, is independent of the form and extent of the radiating surface, provided there are no re-entrant angles or surfaces to intercept the rays of radiant heat. It is dependent on the nature of the surface, temperature difference between surface and surroundings and the absolute temperature of the surface. As indicated in the following example, the total heat given off by radiation and convection is expressed by $H = K\ (t_s - t_a)\ A$.

EXAMPLE:—$H = K\ (t_s - t_a)\ A$

H = Total heat given off by radiation and convection.

K = Taken as a constant known as coefficient of transmission.

t_s = Temperature of heating media of radiator.

t_a = Temperature of the room.

A = Area of radiator in square feet.

At 212 degrees Fahr. steam pressure is 0 lb. per sq. in. gauge

At 218.5 degrees Fahr. steam pressure is 2 lb. per sq. in. gauge

At 239.4 degrees Fahr. steam pressure is 10 lb. per sq. in. gauge

$$\frac{H_1}{H_2} = \frac{K\ (t_s - t_a)\ A}{K\ (t_s - t_a)\ A} = \frac{(t_s - t_a)}{(t_s - t_a)} = \frac{218.5}{239.4}$$

$= .912$ or there is about 9% more heat given off by a radiator wherein the steam pressure is 10 lb. per sq. in. than when the steam pressure is 2 lb. per sq. in.

In this example the coefficient of transmission is likewise constant. The ratio of the heat of the radiator under ten pounds per square inch pressure, as compared with the ratio of the heat of the radiator under two pounds per square inch pressure is worked out and found to be .912. In other words about 9 per cent more heat is given off by the radiator containing steam at 10 pounds per square inch pressure than is given off by the same radiator when the steam is under a pressure of 2 pounds per square inch. Likewise, the area of the radiator may be reduced 9 per cent, when steam at 10 pounds per square inch gage pressure is used as compared with steam at 2 pounds per square inch gage pressure. In other words, where one hundred square feet of radiation is used at two pounds pressure, 91 square feet of radiation would give the same results at 10 pound pressure.

◆

Another Case Where Water Leaves the Boiler

Editor, DOMESTIC ENGINEERING:—Can you give me some information about a heating job which does not function properly?

There is a steam heating system installed in our village in a hotel, a soft drink parlor and a bowling alley, and in a residence.

There is a 6-inch feed pipe which takes care of the residence, hotel and soft drink parlor, and 2½-inch feed pipe supplying the bowling alley. Each feed pipe has a shut-off valve in line. The bowling alley is not turned on at all times, so when they open the valve for the alleys and raise steam it takes all the water out of the boiler for a certain length of time, and then all at once it comes all back in again, and this has caused the breakage of the boiler a few times.

Last year, in January, it broke the whole boiler and last week it again happened and cracked a section in same.

The 3 return pipes are about nearly level with boiler height, 2 return pipes are about 4 inches above, and one is level.

What causes the water to go out the boiler?

Even when they turned off some of the other valves on the other line and open them again it does the same thing.

Wisconsin. L. J. A.

A common cause of water line trouble is the lack of distance between the normal water line of the boiler and the dry return. This should be not less than 19 inches and 24 inches is much better.

Also, there may be grease and oil in the boiler, in which case the boiler should be blown off, using one of the preparations made for this purpose.

Or, the outlet connections may be too small. We sometimes find that fitters have bushed the openings in

the outlets, whereas the risers should be full size out of these flow openings and should be connected into a header, with tees from this header to the mains, and with an equalizer pipe from the header back to the return. Preferably the equalizer and return piping should be of the Hartford type, and the header should be of the drop header type.

It may be possible that you will have to pit the boiler to gain sufficient distance between the water level and the returns.

It should also be mentioned that some type of automatic boiler feeder would prevent breakages of the sections and should be installed regardless of what else is done to remedy the condition.

Refrigeration

(Continued from Page 95)

chloride drums are connected to the suction side of the compressor by standing the drums on end and drawing the gas from the top of the drum. As soon as the plant is fully charged the pressure control valves are set and it is allowed to operate.

When the plant has been in operation for about two weeks or so the dehydrator is removed from the installation.

Trouble to Avoid

The chief difficulties to be watched for are troubles resulting from dirt, scale, rust and water. It is important that neither rubber for packing or any other purpose nor compositions of rubber in valve stem packings with methyl chloride should be used. It is also essential not to let the methyl chloride pressure get below 1 lb.

◆

Orange, N. J., Association Field Man Resigns

The resignation of V. P. Christofferson as field representative of the Master Plumbers' Association of Orange, N. J., was tendered recently. Mr. Christofferson, during his several years with that organization, arranged for it a permanent exhibition of plumbing and heating materials.

◆

Utica Association Elects Officers

The Association of Master Plumbers of Utica, Inc., Utica, N. Y., has elected Raymond L. Ehrsam, as president of the organization for the ensuing year. Headquarters of the association are at 224 Genesee street. Other officers elected are Henry Witte, vice president; L. R. Latterman, treasurer and Ernest Marotta, secretary.

◆

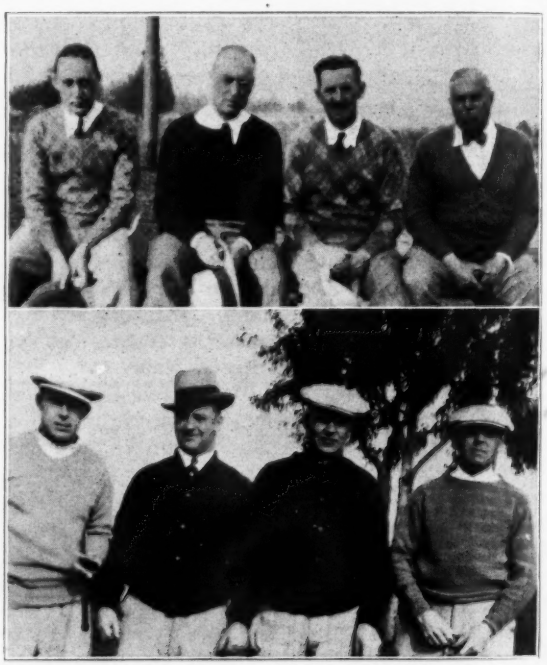
New York University Offers Courses in Heating and Ventilating

New York University, in addition to the evening courses which it is offering in hydraulics and pneumatics for plumbers beginning with February 10 and continuing through the week of June 23, is at the same time offering over the same period a course in heating and ventilating. The latter course includes the following subjects: 1st year: materials of construction, business English, practical mathematics, practical physics; 2nd year: heat engineering, principles of heating and ventilating design, heat laboratory; 3rd year: application of heating and ventilating design, estimating and commercial practices in heating and ventilating. The third year classes are open to men who have had sufficient technical preparation, to be determined by personal interview. Registration for these subjects will be held at the Washington Square center of the university every evening except Saturday from January 27 to February 24.

◆

P. & H. Golfers Play Ingleside Course

A warm day and a beautiful course brought out close to 40 golfing members of the Plumbing and Heating Club of San Francisco, Calif., and the Bay Cities on January 23. These events invariably serve to promote still closer contacts between the various branches of the industry, as the tournaments always bring out a generous



Top row: F. F. Elliott, C. C. Anderson, Thomas C. Douglass and W. Allen Taylor. Bottom row: Fred A. Oelschlagel, Harry Hoopes, J. J. McLeod and H. W. Finch. Photos taken at the January meet of the Plumbing and Heating Club of San Francisco

representation among the executives of the manufacturing, jobbing and contracting firms of Northern California.

The January tournament was played at Ingleside, the greens and fairways being in perfect condition. Birdies were plentiful, C. C. Anderson drawing two, one each being collected by Donald O'Hair and Ralph P. Olsen. President J. V. Young and Ed. Kraus were well out in front with their putting, while H. Porter Wilson, Benjamin F. Blair, Thomas C. Douglass and Carl J. McCarthy did some championship driving.

J. V. Young shot a pretty game, turning in a net 67 card. C. C. Anderson also did some fast work over the course, tying with Mr. Young. Both being "A"-class men, the tie was decided by the flip of a coin, the decision

going to Mr. Young. Until the last card was turned in, Carl J. McCarthy looked like the winner in "B" division with 69, but Robert Lees reported in with a 62. Benjamin F. Blair's net 70 was the best looking score in "C" class, while Ralph P. Olsen's 71 entitled him to honors in the "D" division. Walter Seitz turned in the best guest score—93. Low gross resulted in a tie between Mr. Lees and Mr. Young.

The scores:

Name	G.	H.	Net	Name	G.	H.	Net
Wilson	91	18	73	Harris	105	Guest	105
Young	82	15	67	McLeod	94	20	74
Finch	101	20	81	Oelschlagel	96	24	72
Hoopes	115	38	77	Turner, W.	94	22	72
Turner, D.	102	26	76	Brown	103	Guest	103
McCarthy	91	22	69	Vigus	93	23	70
Heymans	110	28	82	Atwood	100	28	72
Anderson	83	16	67	Doerr	104	Guest	104
Seitz	93	Guest	93	Olsen	108	37	71
Camp	93	19	74	Blair, B. F.	98	28	70
Blair, B. S.	118	Guest	118	Elliott	93	13	80
Forsythe	109	'32	77	Rowe	92	17	75
Taylor	96	15	81	Douglass	83	9	74
Allmon	98	18	80	Callahan	99	Guest	99
O'Hair	86	15	71	Higgins	113	31	82
Kraus	109	25	84	Lees	82	20	62
Clark	100	23	77				

◆

Milwaukee Contractors Elect Officers

The Heating & Piping Contractors Milwaukee Association, at the recent annual meeting of that organization, held at the Milwaukee Elks' club, elected George Stoehr, president. Other officers chosen include: Allen Pflugradt, vice president; Paul Downey, secretary; John S. Jung, treasurer, and Michael Mueller, sergeant at arms.

Three directors were chosen to include: Edward A. Knab, Paul Wenninger and Harry M. Dailey. Carl Marsh continues as general counsel of the organization.

◆

Westchester County Association Celebrates Anniversary

Marking the twelfth year of its organization, the Master Plumbers' and Steamfitters' Association of Westchester County, N. Y., gave a dinner dance on January 23 at Lawrence Inn, Mamaroneck, N. Y. In a measure the importance of the work that is being done by the association and the spirit that exists among its membership in this area may be drawn from the significance of the fact that twelve years ago the attendance at a similar affair numbered less than fifty as compared with the close to three hundred and fifty members, their families and guests who were present to enjoy the banquet, entertainment and dancing this year.

During dinner a number of sketches which included music, songs and dancing were presented by a group of stars from the Keith circuit. Mildred Nichols, little niece of Arthur Fuchs, vice president of the association, entertained with songs and her dancing agility. Louis Young, a former president, created his usual amount of merriment with a small telescope through which he induced many of the men to look, only to be left with a circle of black grease paint around the eye.

Fergus McLoughlin, president of the New York State Association, was a guest from Manhattan as was Andrew I. Greene, while Fred Schmalstich was present from the Bronx organization. Between courses President McLoughlin addressed the gathering with a few words of greeting and presented Adam Berle, White

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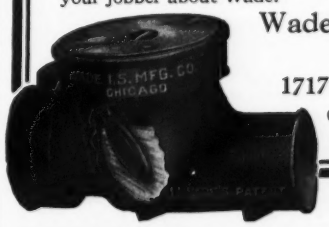

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That's an important feature of the Overton but *how* it fits is a far more important feature. Try one and see!

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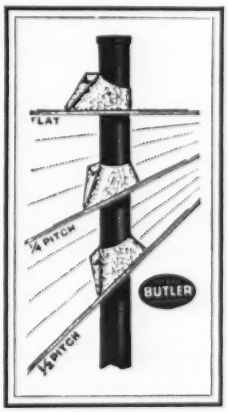
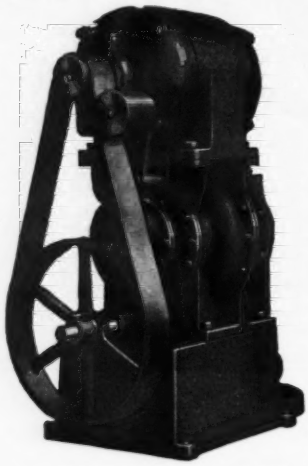


ALAMO DORWARD



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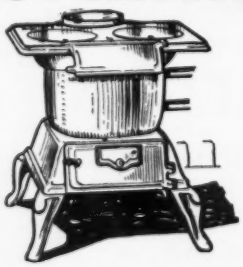

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Plains, with a wrist watch on behalf of the Westchester Association membership as a token of their appreciation of his efforts as president for two years. Past President Berle in thanking his colleagues stated that he hoped to be able to render further service to the organization. E. J. Sheppard with the assistance of Mr. Fuchs carried out the arrangements for the affair.

◆

Boston H. & P. Contractors Hold Annual Dinner

The annual dinner of the Heating and Piping Contractors Boston Association, Inc., was held on Thursday evening, January 23, at the Engineers club, 2 Commonwealth avenue, Boston, Mass. The dinner was featured with a talk by William E. Taylor, executive secretary of the Heating & Piping Contractors New York City Association. Mr. Taylor spoke at length on present day conditions in the heating industry and the causes thereof. He praised the idea of having associate members of a contractors' organization made up of manufacturers and jobbers, such as the Boston association has. He also described in considerable detail the preliminary work which is leading up to the formation of the Heating Board of Trade in New York City.

Balloting for officers for 1930 resulted in the following: President, Thomas O'Callaghan; vice president, E. A. Dussosoit; treasurer, Peter J. McMurrer; clerk, Joseph F. Dwyer; directors, F. W. Howard, Maurice E. Chase, H. E. Whitten and W. S. Cousens; standards committee, Ralph S. Franklin, L. R. Stetson and E. C. Whittaker; trade relations committee, Herbert A. Snow, Mr. Whitten and Mr. Chase; examining board, Edgar Shaw, F. W. Zemeir and E. S. Stubbs; legislation committee, Mr. Dussosoit, Mr. Cousens and R. L. Beck; auditing committee, T. A. Ridder, William T. Smallman and James P. Sullivan; nominating committee, Frank A. Merrill, Mr. Snow and I. D. McLean; welfare committee, H. E. Barber, R. B. Crocker and Mr. Shaw, with Peter J. McMurrer and Joseph E. Hayes as substitutes.

Top row: A. Schlehuber, president, Peoria; F. S. Shepley, F. V. Hayner, both of Freeport, Ill. Bottom row: Mr. and Mrs. R. H. Wagner of St. Charles, George Quest, Blake Specialty Co., Rock Island. Photos taken at recent convention of Illinois Master Plumbers Association

The usual annual reports were made including that of President O'Callaghan. Among the things that Mr. O'Callaghan pointed out that had been done during the preceding year was a large increase in the regular membership; an increase of three in the associate membership; the establishment of certified heating, with almost 50 jobs having been done; the inauguration of a credit bureau and cost reviewing service; the securing of the approval of the association's certified heat program by the secretary of the Massachusetts League of Co-operative Banks, and the materials and methods committee of the local chapter of American Institute of Architects; the holding of meetings which will lead to better working agreements with sub-contractors; the starting of a co-operative movement with general contractors to reduce the "shopping" of bids; the taking of steps towards closer relations with the gas company in the selling of gas-fired boilers; the holding of a meeting for manufacturers, jobbers and salesmen at which the contractors were hosts; the usual successful outing; and the formation of a credit committee.

Mr. O'Callaghan also outlined briefly some of the plans of the association for 1930.

It was announced that the associate members had elected George Elliott, Boston manager for the Walworth Co., and George E. Carey, Jr., who holds a similar position with Pierce, Butler & Pierce Mfg. Corp., as advisory members of the board of directors.

Entertainment included a parody song by Bernard Dwyer and a soft shoe dance by the same contractor-entertainer, several songs by E. T. Keefe, and music by an orchestra.

◆

Michigan Chapter A. S. H. V. E. Holds January Meeting

The Michigan Chapter of the American Society of Heating and Ventilating Engineers, at its January meeting at the Cadillac Athletic club, Detroit, heard an interesting speech on "What the Machine Age is Doing for Us and to Us," made by Prof. W. D. Henderson, director of the extension division of the University of Michigan.

Another speaker who held the gathering's attention was Soren Thorensen, engineer of designs of the Detroit and Canada tunnel. Mr. Thorensen's lecture covered in detail the design of this tunnel, and was illustrated by slides.

President William G. Boales called upon William J. Whelan and E. E. Dubry, who outlined plans for the February meeting which is to be held at the Delray plant of the Detroit Edison Co. The Michigan Chapter is the guest of the Edison company at its February meeting each year. Cecil Farrar, chairman of the national membership committee, was introduced by George Giguerre, and made a brief talk on securing new members.

◆

A Correction

In the February 8 issue of DOMESTIC ENGINEERING it was stated that Leon H. Curtice, who addressed the Illinois state convention, represented the American Gas Association. Mr. Curtice is managing director of the National Gas Appliance Manufacturers' Association.

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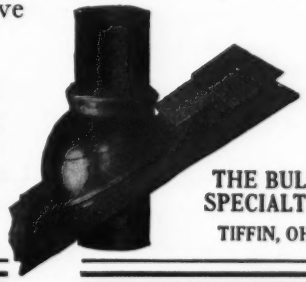
See the Bullard Roof Flashing at your jobber's or write today for full particulars.



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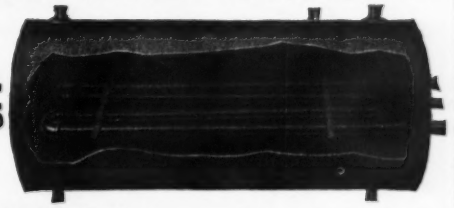

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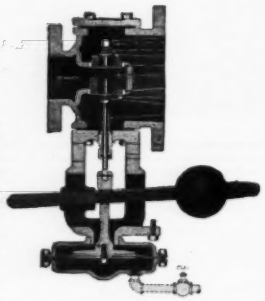

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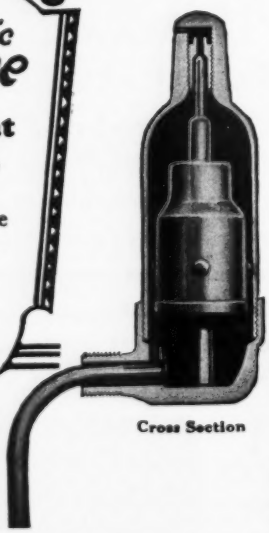

Cross Section

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Obituary

Charles J. Soleau

Charles J. Soleau, heating contractor of Montclair, N. J., died at his home, 111 Mount Hebron road, on February 7, of heart disease following an illness of three months. Besides being a member of the Heating and Piping Contractors' Newark Association, Mr. Soleau was prominent in the affairs of both the Montclair Elks and Kiwanis clubs. He was a former superintendent of building and grounds in the Montclair public schools. Mr. Soleau was born in Kansas City, Mo., forty-two years ago and is survived by his widow, two sons, a daughter, his father, four sisters, and a brother.

Chas. A. Blackstock

Charles A. Blackstock, proprietor of the Decatur Plumbing Co., Decatur, Ga., died suddenly at 2:30 Wednesday morning, February 5, at his home in that city. He was at his business the day before, seemingly enjoying his usual health. His concern, the Decatur Plumbing Co., was a pioneer in the plumbing business in De Kalb county, Ga., having been organized in 1910 by C. A. Blackstock and Harry Coleman. Mr. Blackstock is survived by his widow, and by two brothers and a sister.

Thomas Clark

Thomas Clark, plumbing and heating contractor and former postmaster of Smethport, Pa., died recently at his home on Water street as a result of a severe paralytic stroke suffered on January 10, from which he never rallied. Mr. Clark moved to Smethport in 1890, where he conducted a plumbing contracting business up until the time of his death with the exception of a few years.

Mr. Clark was a member of the Galeton Knights of Columbus and of the local Protected Home Circle. He is survived by two daughters, two sons, two sisters and four brothers.

J. Lyon Robie

J. Lyon Robie, for more than a quarter of a century proprietor of a plumbing shop at Bath, N. Y., bearing his name, died at his home in that city recently, following a long illness. He was in his 80th year.

M. Hoffman

M. Hoffman, heating and plumbing contractor of La Crosse, Wis., died in that city on January 7. Mr. Hoffman, who was active in the La Crosse Master Plumbers' Association, received his early training with the Trane Co. in La Crosse. From 1902 to 1910 he resided in St. Louis, Mo., and in 1912 he formed a partnership with A. Braunec, later becoming associated in a partnership with Otto Ratz of La Crosse. Mr. Hoffman is survived by his wife and two brothers.

James T. Connors

James T. Connors, who has been engaged in the plumbing and heating business in Sacramento, Calif., for the past twenty years, died recently in that city after a protracted illness. Mr. Connors was a native of Canada and had been a resident of Pennsylvania before moving to Sacramento.

Plumbing Code Tabulations

(Continued from Page 80)

pipe they serve, a larger number call for 4-inch cleanouts on 4-inch pipe and larger sizes, and for smaller pipes than 4 inches, the cleanout is the same size as the pipe.

Our idea is that in many instances these two requirements amount to the same thing. For instance, in many of the smaller places, probably a 4-inch drain is about as large as house drains run, so that in the case of such a town either of the two statements as to size would mean about the same thing.

Therefore, it would seem that the second of the two statements might well be decided upon for any and all plumbing codes. This is a good illustration of what we mean when we refer to the possibility that this tabulating work may offer some help in getting onto a definite basis of common practice.

Cleanout at Foot of Stack May Become Universal

The requirement that a cleanout be installed at the foot of each stack is also in such general use that these tabulations perhaps point to the fact that such a requirement might become a universal requirement.

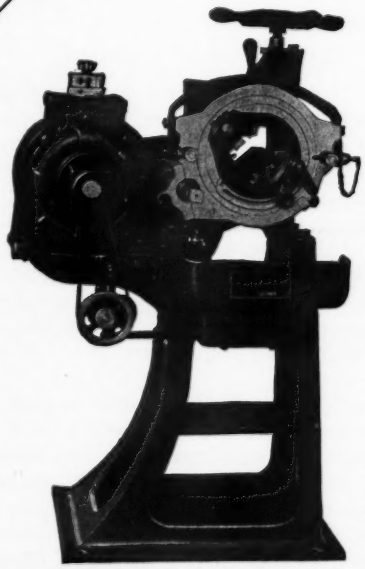
We might point out to those who are interested in this particular feature of this work, that even though we cannot make a final decision on any one of these points, these tabulations having once been printed, they then become permanently available for study with possible influence on this phase of the subject at some later date.

Relative to the question of size of cleanouts mentioned above, we note that several cities call for the use of cleanouts of the same size as the pipe, up to and including 6 inches. As far as we can see, a 4-inch cleanout provides a hole large enough for all purposes. That being so, why ask the owner to pay for a 5-inch or 6-inch cleanout, when a 4-inch cleanout would be just exactly as serviceable? A 6-inch cleanout costs real money. It is in all such ways as this that the cost of plumbing can be lessened without in any way affecting its quality.

There is another specification contained in a considerable number of the codes that might possibly meet with general acceptance,—"a floor or wall fixture connection, bolted or screwed, is considered a cleanout." Under this regulation, a water closet, inasmuch as it could be taken up, would be considered as offering cleaning possibilities at the point where it is installed, that would make it unnecessary to employ a cleanout.

Another requirement that would seem desirable is this one:—"A cleanout within 12 inches of a wall, shall be extended through same.

In studying this collection of 400 codes, it comes to us quite strongly, that perhaps under modern conditions there may not be quite the need for a cleanout at every point of possible stoppage that there once was. It seems as if we could depend somewhat at least, on better judgment now than in years far back, in the use of plumbing installations, for it would seem that people in general have a more inti-



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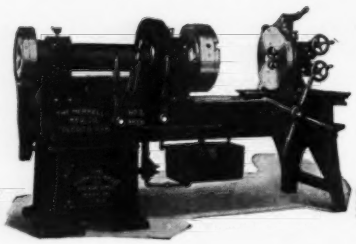

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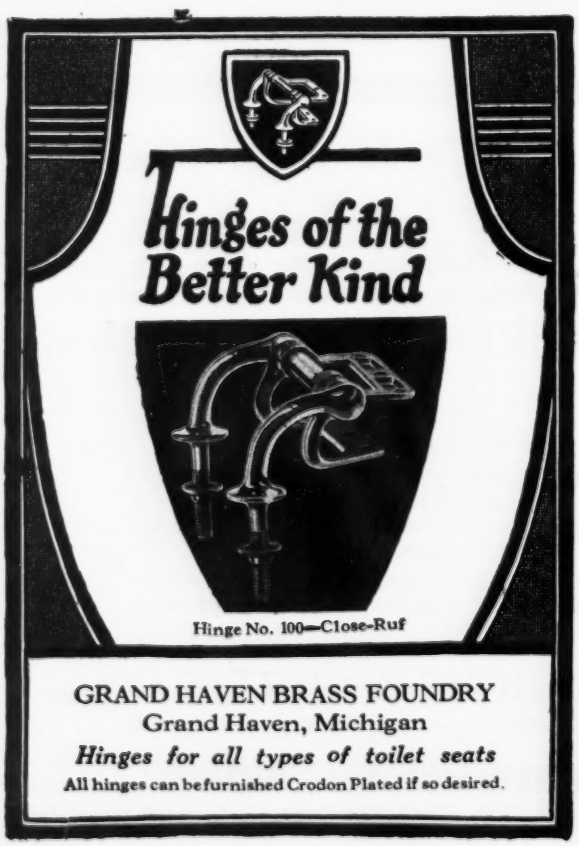
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mate knowledge of results that will occur from certain causes. Much attention has been given to fixture design, correct sizing of pipes, construction of traps, waste fittings, etc.; ventilation is more positive. All of these conditions it seems to us, should be reflected in lessened possibilities of stoppage, and that being the case, why use all the cleanouts that some cities have gradually come to demand? All of this offers ground for discussion. Our reasoning may not be so correct as it would seem, and we would like to be set right.

One thing that is noticeable,—scattered through the tabulations, you will find many mentions of special attention to sink lines relative to the use of cleanouts. This we believe comes from the knowledge that the kitchen sink is a fixture whose waste offers the greatest chance for clogging the pipes which serve it. Therefore it seems a wise thing to us that special cleaning facilities be provided for this particular fixture. There are some codes indeed, which make practically no cleanout provisions other than for sinks.

The Santa Barbara, Calif., code provides for construction that will obviate the use of a cleanout, as follows:—"In places such as bathrooms above the first floor, where it is not possible to have cleanouts, two one-eighth bends may be used, or long-sweep fittings; no short one-fourth bends shall be used."

Refrigerator lines in our estimation present one of the most vulnerable points in the plumbing system. Owing to an entire absence of scouring action on refrigerator drains, there is greater possibility of stoppage on them than anywhere else on the drainage system. And yet very few ordinances, comparatively, require cleanouts. Our recommendation would be that cleanouts be used on refrigerator lines, especially horizontals since the flow is slight and clogging is liable to occur.

Construction of Cleanouts

Hartford, Conn., shows in its code, good construction for cleanouts, as follows:—"Cleanout plugs shall be of brass at least one-quarter inch thick, and the engaging parts shall have at least six threads which must be smoothed so as to make tight without the use of wicking or cements that will become hard. Each plug shall have a square or hexagonal nut at least three-quarters inch high and one and one-half inches across the parallel sides. Before a cleanout plug is screwed into its ferrule, threads must be lubricated with graphite, to prevent corrosion and sticking."

The Atlanta, Ga., code has another specification for cleanout construction, which we will give, for so few codes give any real information on this subject, that we decided not to show these data in our tabulation. The statement is as follows:—"The bodies of cleanout ferrules shall be made of standard pipe sizes, conform in thickness to that required for pipe and fittings of the same metal, and extend not less than one-quarter inch above the hub. The cleanout cap or plug shall be of heavy brass, not less than one-eighth inch thick, and provided with raised nut or recessed socket, for removal."

Atlanta also shows a different method of arriving at distances between cleanouts on long horizontal drainage lines, as follows:—"The distance between cleanouts in horizontal soil lines shall not exceed 100 times the diameter of the pipe." According to our figuring, this would mean that on a 2-inch line the distance would be 16 ft., 33 ft. on 4-in., 40 ft. on 5-in., etc. It seems to us that this method offers a very intelligent plan of arranging these distances.

Evansville, Ind., has a very clearly stated construction for the foot of a soil or waste stack, with cleanout, as follows:—"At the foot of all vertical lines of waste pipe, a Y and one-eighth bend, or two one-eighth bends with a Y above the bends, shall be installed in each vertical line and a cleanout caulked into the Y. The cleanout must be carried flush with the floor line if the fittings shall be installed beneath the floor."

Fort Wayne, Ind., gets around the use of a cleanout for draining the cellar, in the following:—"When a cellar drain is used, the cleanouts in basement may be flush with the floor or set in a box; otherwise all cellar cleanouts shall extend at least one-inch above the cellar floor."

◆

Richmond Association Holds Semi-Monthly Luncheons

The Master Plumbers and Heating Association of Richmond, Va., in accordance with the plan adopted in December, has been holding downtown luncheons twice a month—the first and third Thursdays—and has found the plan working out successfully. The members who have attended these meetings have expressed themselves as pleased with the social feature and the chance offered to talk over association affairs, and matters of business policy.

Those present at the first meeting held in January included T. E. Beckner, J. R. Harmon, W. G. Winter, T. A. Talley, H. G. Longworth, B. E. Kerr, J. C. Pettigrew, H. A. Carter, E. G. Harris and J. Stuart Graham.

◆

Central Suffolk Association Disbands

The Suffolk County Central Association of Master Plumbers, Suffolk county, N. Y., has recently disbanded its local organization, and the following members have joined the Eastern Long Island association: Charles W. Hawkins of Belleport; Robinson & Dininny, Blue Point; Edwin F. Usher, William Watts & Son, O. C. Horton & Son and Aaron Levy, all of Patchogue.

◆

New York Masters Entertained With Moving Pictures

Motion pictures showing the manufacture of its pipe were displayed before a recent joint meeting of master plumbers of New York City by the Youngstown Sheet & Tube Co., Youngstown, Ohio, in the club rooms of the Manhattan association. Another feature of the meeting, which was well attended, was the showing of motion pictures of members of the Manhattan organization taken at the outing last summer. The pictures disclosed some very amusing scenes and consequently were quite entertaining.

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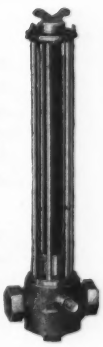

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Youngwood, Pa.

Woman's Page

In a recent address, Robert A. LaCentra, former president of the Boston Master Plumbers' Association, urged co-operation with the women's auxiliaries, for, he said, "they bear a great part toward the prosperity of both the individual contractor and his association." Leaders in association affairs are realizing more and more the importance of the work performed by the women's auxiliaries. The friendly spirit which is encouraged at the meetings of these organizations and the various social affairs which are held result in greater attendance at conventions, and a greater interest in the work of the master plumbers' associations.

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Iowa Ladies' Auxiliary Convenes at Sioux City

The Ladies' Auxiliary of the Iowa Master Plumbers Association held its business session in the Martin Hotel, Sioux City, on Monday, January 27. Mrs. J. W. Koch, president, presided. Mrs. M. J. Orr of Sioux City welcomed the ladies and Mrs. Koch acknowledged the warm welcoming address.

During the session the ladies listened to an address by Don Holt of Sioux City, a past state president. Mr. Holt advised the ladies that every morning they should inquire of their husbands as to the net profit made on the previous day.

The following officers were elected: President, Mrs. Koch (re-elected); vice president, Mrs. Don Holt of Sioux

A Message to Auxiliary Members

By Mrs. H. E. Shreiner, of Elkhart, president of the Ladies' Auxiliary to the Indiana Society of Sanitary Engineers

In the year of 1925 at West Baden, I was elected vice president of the Women's Auxiliary of Indiana, and served until 1929, when, at South Bend, I was elected president of the auxiliary. I can say I enjoy the work very much and will do all I can for the advancement of the auxiliary. There are many things the Woman's Auxiliary might accomplish if we would let co-operation be the governing key-note of every auxiliary member. We were organized at Indianapolis in 1913, through the efforts of Mr. Wm. Wolly, who was at that time president of the Sanitary Engineers of Indiana. We have had three very successful presidents, whom we highly honor, Mrs. George Geiss of Indianapolis, Mrs. Allen Weinhardt of Terre Haute and Mrs. John Orth of Lafayette, and there has been much accomplished during their terms. Among some of the things, the Woman's Auxiliary gave $100.00 to the Red Cross, and $100.00 to the Y. M. C. A. in France during the World War. Also the auxiliary gave $100.00 to the master plumbers of Indiana for a scholarship fund for a school in Valparaiso. The Indiana auxiliary was among the first to give $100.00 to the National Scholarship fund, putting us in the 100% class, and have given $100.00 every year since. For three years we had what we called a "Rainy Day Fund," and on every rainy day each member was to lay a penny aside, and at the annual convention this money was brought, which netted us a goodly sum.

Within the last few weeks I have gone down to Fort Wayne, and have organized a local auxiliary in that city. We are proud to have this new local added to our list, and I, as your president, am glad to carry on the work of the auxiliary and hope to have the co-operation of the locals of Indiana.

City; secretary, Mrs. W. V. Hagan of Sioux City; treasurer, Mrs. V. J. Hagan of Sioux City.

The entertainment for the ladies included the annual banquet on the first evening of the convention, followed by dancing. On the first afternoon of the convention the ladies were entertained at a theater party. On the second day there was a luncheon, followed by bridge.

New Jersey State Board Meets

The board of directors of the Women's Auxiliary to the New Jersey State Association of Master Plumbers met on the afternoon of Monday, February 3, in the Masonic Building, 235 Main street, Orange. Representatives from Union City, Jersey City, Clifton, Trenton and Montclair were present, there being a total of twenty-eight in attendance. Mrs. William T. J. Orriss, state president, was in the chair. In the evening the state officers were the guests of the Orange Women's Auxiliary at a dinner and, later, at a dance in the Walnut Hall, corner of Main and Walnut streets, in East Orange. Master plumbers and friends of the members were guests at the dance, one hundred and ten being present in all. Prizes were given for the balloon dance and spot dance. All those present felt that they had spent a most enjoyable evening. The next state meeting will be held some time in April.

Philadelphia Auxiliary Celebrates Seventh Anniversary

In McCallister's Auditorium, Philadelphia, Pa., the Women's Auxiliary of the Master Plumbers' Association of that city, on February 3, commemorated its seventh anniversary by entertaining approximately 300 master plumbers and friends at dinner. M. J. Feeney, president of the Philadelphia association, making his first appearance on crutches since the fall in which he broke his leg following the funeral of the late National President John A. Quinn, presented Mrs. George M. Hicks, president of the auxiliary, as toastmaster. Acknowledging the greeting which was accorded her, Mrs. Hicks stated that she and the auxiliary membership are promulgating plans designed to make the forthcoming state convention, which is to be held at Philadelphia in May, particularly memorable. She also called attention to the relaxation on the part of public officials that is apparent where the construction of public comfort stations throughout the city is concerned and urged every one to revive efforts toward the construction of these necessities.

H. S. Thrasher, business manager of the Philadelphia Plumbing and Heating Development League, when presented, advised the wives of master plumbers to help with their husbands' ledgers. Harry L. Righter of Germantown, when called upon, pledged the aid of the master plumbers in his section in making the state convention

Officers of the Iowa Women's Auxiliary—Left to right: Mrs. V. J. Hagan of Sioux City, treasurer; Mrs. W. V. Hagan, of Sioux City, secretary; Mrs. Don Holt, of Sioux City, vice-president; Mrs. J. W. Koch of Waterloo, president. Photos taken at the annual meeting of the Iowa auxiliary

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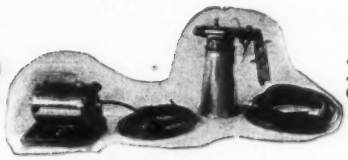

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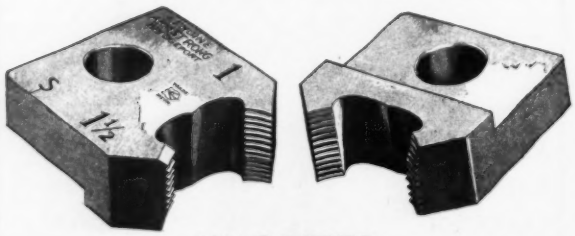

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a success. George Wobensmith of Hajoca Corp., after directing attention to the vacant place at the table which was reserved in honor of the late National President Quinn, whom he eulogized briefly, said that all efforts should be directed toward correcting the derogatory light in which some of the public seems to hold the master plumber. Mr. Wobensmith, who is keenly interested in the modernization of homes, urged that wholehearted effort be made toward this end, and thanked "Domestic Engineering" for its efforts in this direction. George F. Uber, who is general chairman of the state convention committee, spoke on the plans that are going forward for the meeting in May and asked that every one plan to attend.

Herbert M. Packer, chief of the bureau of housing and sanitation of the department of public health of Philadelphia, in a talk said that he looked to the aid of members of the association for help in enforcing the plumbing code. Charles J. Crockett, merchandising engineer, who is now associated with Hajoca Corp., speaking on that subject, advised that greater selling efforts be put forth by master plumbers. An expression of thanks was offered by Mr. Feeney, who is also national secretary, for the floral tributes sent for the late national president, of which there were more than three hundred, and for the hundreds of letters and telegrams of condolences from all parts of the country.

A feature of the entertainment that followed was a chorus of fifteen voices, and dancing concluded the evening. Souvenirs were distributed. The committee supervising arrangements for the affair was comprised of the following: Mrs. James J. Rooney, chairman; Mrs. John F. Seibel, Mrs. Frank Stratton, Mrs. Walter Raid, Mrs. Martin Moran and Miss Violet Jakoby.

Officers of Kansas State Auxiliary Meet

Mrs. Carl Graeber, president of the Women's Auxiliary of the Kansas Division Association of Master Plumbers, called a special meeting of officers held at the Broadview Hotel in Emporia, on February 15, at 6 p. m. The program for the convention of the state auxiliary (to be held March 10 and 11 at Salina) was discussed, and plans were made for entertainment of the guests.

North Shore Auxiliary Meets

The January meeting of the North Shore Auxiliary was most encouraging for, in spite of the inclement weather, fifteen members were present at the residence of Mrs. George Wood, Winnetka, Ill., on January 16. A delicious chop-suey luncheon was served at one o'clock. Much interest was shown in the business meeting, presided over by the new president, Mrs. George Swift. Plans were discussed for the annual banquet to be held in February. Delegates chosen to attend the state convention included Mrs. G. Swift, Mrs. F. Flader, and Mrs. Julia McKenna. All are looking forward to the report which will be given at the next meeting. After the business meeting, cards were played, and high scores were held by Mrs. George Swift, Mrs. A. Kyle, Miss Esther Schmeisser and Mrs. Harry Hagen.

North Hudson Auxiliary to Hold Masquerade

The Women's Auxiliary of the Master Plumbers' Association of North Hudson, N. J., is arranging to hold its yearly masquerade party on March 8 at the Elks club, Union City, N. J. The first president of the organization, Mrs. Charles Zimmerman, is chairman. She is being assisted by Mrs. W. Borg; Mrs. Charles Steller; Mrs. Vincent Farrelly; Mrs. Edwin Seitz, and Mrs. Edward Muth, all members of the committee.

Syracuse Auxiliary Plans Social Affairs

Members of the Syracuse, N. Y., Auxiliary are opening their homes during the winter for parties, proceeds of which go toward payment of the scholarship fund. A fine program for the season is being mapped out by the new president. It includes a covered-dish dinner once a month at the rooms of the master plumbers' association. These dinners will be for the purpose of buying new equipment for the rooms, and will be attended by master plumbers and their wives.

New Auxiliary Organized in Jackson, Mich.

Mrs. M. Mesnard, president of the Women's Auxiliary to the Michigan Association of Master Plumbers, is happy to report that a local auxiliary has been formed in Jackson, Mich. The occasion was sponsored by the Jackson Association of Master Plumbers, who entertained the ladies at a delicious chicken dinner at Meadowlark Inn on February 3. At this time, Mrs. Mesnard, assisted by the state secretary, Mrs. Minerva Snyder, and the president of the Detroit auxiliary, Mrs. Hazel Nawrot, effected an organization of eleven charter members. The following officers were chosen: President, Mrs. Ruth Murray, 926 Frances street; first vice president, Mrs. Eva Schlenker, 201 South Grinnel street; second vice president, Mrs. Madge Stumer, 620 Jefferson street; recording secretary, Mrs. Mildred Reed, 130 East Addison street; treasurer, Mrs. Helen Redman, 725 Woodlawn street. Other charter members of this organization are: Mrs. Rebecca Milne, Mrs. Sadie Judy, Mrs. Margaret Braund, Mrs. Effie Dutton and Mrs. Florence Reed. Mrs. Kate Keeley, with her secretary, Miss Marjorie Card, afforded much inspiration and encouragement to the meeting.

Officers Elected by Wilmington Auxiliary

The Women's Auxiliary of the Master Plumbers' Association of Wilmington, Del., recently elected Mrs. George A. Barnett, president; Mrs. Frank H. Escott, vice president; Mrs. Thomas W. Motherall, secretary, and Mrs. Paul E. Middleton, treasurer. The members of the auxiliary meet the second Tuesday of each month at the various homes. Several social affairs are planned for the next few months.

Boston Auxiliary Plans Card Party and Dance

A large and enthusiastic meeting of the Women's Auxiliary of the Boston Master Plumbers' Association was held on Tuesday evening, January 21, at the home of the president, Mrs. Herbert L. Rose, in Cambridge. Mrs. Rose presided and all the officers were present. The meeting was honored by the presence of Mrs. Wallace T. Wordell of Taunton, a director of the Women's Auxiliary to the National Association of Master Plumbers. Plans were discussed and committees formed for the auxiliary's card party and dance to be held at the Brighthelmstone

Group of ladies attending the meeting of the Iowa Women's Auxiliary

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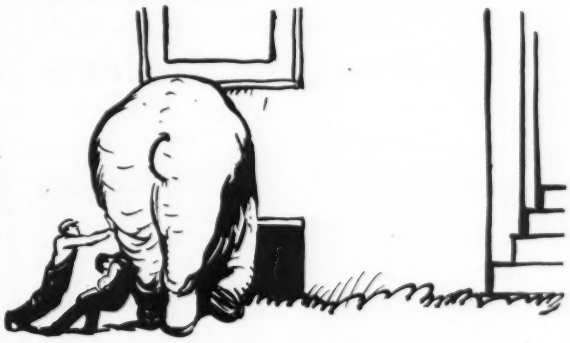

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Club, Allston, on Thursday evening, February 27. Delicious refreshments and good music are among the interesting features planned for this occasion. A good time is promised for all at this charming clubhouse. P. W. Donoghue, chairman of the national convention committee, gave an interesting outline of possible plans for entertaining the convention in Boston in June. The husbands and sons of the members entertained themselves in the sun-room during the meeting. Later all met in the spacious dining-room to enjoy the usual bountiful hospitality of the Rose family.

Mansfield Auxiliary Elects Officers

Mrs. Henry Denig recently entertained the Master Plumbers' Auxiliary of Mansfield, Ohio, at the Woman's Club. Ten members were present. The meeting was opened with a business session and election of officers. The new officers are: Mrs. Charles Arting, president; Mrs. A. Grassick, vice president; Mrs. Roy Learsch, secretary and treasurer; Mrs. O. P. Wervey, press reporter. Mrs. Learsch was chosen as the one delegate to attend the state convention. Miss Alma Niesen, president of the Ohio State Auxiliary, presented the Mansfield auxiliary with a beautiful hand painted plate. At the close of the session, a two-course luncheon was served. The next meeting will be held on February 27 at the home of Mrs. Homer Frye.

Worcester Auxiliary Gives Whist Party and Dinner Dance

The Women's Auxiliary of Worcester, Mass., recently held its fourth public whist party, in the Levana Club Rooms. The party was a great success, and was enjoyed by all the guests, who are always delighted to attend one of the jolly and homelike parties for which this auxiliary has become noted in Worcester. All honors were won by guests of the auxiliary. Refreshments were served, and until adjournment dancing was enjoyed, music being graciously furnished by Mrs. Edward Hanlon and Mrs. Walter Thistle.

Every member of the Worcester auxiliary was present on January 29 at a dinner dance held under the auspices of the master plumbers' association. The association members provided a good time for all, and throughout the evening promoted the enjoyment and amusement of the assembled guests. Each lady was presented with a friendship pin as a souvenir of an enjoyable evening. Election of officers will take place at the March meeting.

Los Angeles Womens Auxiliary Contributes to Charity

The Women's Auxiliary of Los Angeles, Calif., held an enjoyable meeting in January, with the new president, Mrs. George Furtsch, presiding. As the weather was very stormy, the attendance was not as large as usual. Plans were arranged for the celebration of the twenty-ninth anniversary of the auxiliary in February. It was voted to contribute a monthly sum to the Midnight Mission and to the Christ Faith Mission for women and girls.

Trenton Auxiliary Holds Meeting

The Women's Auxiliary of Trenton, N. J., held its monthly meeting on Friday, February 7. Previous to the meeting, dinner was served at Alberti's restaurant.

Kalamazoo Auxiliary Meets

The Women's Auxiliary of Kalamazoo, Mich., held an enjoyable meeting and dinner at the Columbia Hotel on January 13. Another meeting was held at the same place on Monday, February 10.

North Shore Auxiliary Gives Dinner Dance

The Ladies' Auxiliary of the North Shore Plumbing Contractors Association held its annual dinner dance at the Georgian Hotel Ballroom, Davis street at Hinman avenue, Evanston, Ill., on Saturday evening, February 8. Dinner was served at 6:30 P. M., after which guests danced until a late hour. A large number were present, and the affair was greatly enjoyed.

South Side Auxiliary Holds Interesting Meeting

The Broadview Hotel, Chicago, was the scene of the January meeting of the South Side Woman's Auxiliary, at which thirty-seven members were present. The business meeting, which followed the usual delightful luncheon, was called to order and many letters of thanks were read. Mrs. Jones and Mrs. Feldkamp thanked the auxiliary for the lovely flowers they had received during their illness, while a letter of thanks and appreciation came from the President of the Martha Washington Home of Crippled Children. The auxiliary sent a check at Christmas time to the Home which was used to buy coal. Card games were enjoyed after the business session with high bridge honors going to Mrs. Strauss, Mrs. Taffe and Mrs. Khym. Mrs. Kline received highest honors at 500.

New Bedford Auxiliary Elects Officers

The Woman's Auxiliary of the Master Plumbers Association of New Bedford & Vicinity, Mass., held its annual election of officers at the last meeting, which resulted in the re-election of the same officers as last year, namely, Mrs. Harry Mulberry, president; Mrs. Joseph P. Rielly, vice-president; Mrs. John M. Reilly, treasurer, and Mrs. Lester E. Stowell, secretary. The husbands and children of the members of the auxiliary were guests at a bean and salad supper which was served in the master plumbers' rooms. It was a nice family party with about 33 in attendance.

Cincinnati Auxiliary Holds Meeting

The Cincinnati Ladies' Auxiliary held its regular monthly meeting on Monday, February 10, at the plumbers' headquarters, in the American building. The election of officers took place at this time, with the following being chosen: Mrs. A. J. Murphy, president; Mrs. George Doench, vice president; Mrs. George Beidenback, secretary (re-elected); Mrs. H. Renner, treasurer. As a means of enlarging the treasury, Mrs. A. J. Murphy, president-elect, graciously donated a beautiful hand-made quilt to be sold for the benefit of the auxiliary. Mrs. M. R. Manley, as delegate to the state convention, read an interesting report, which outlined the activities participated in at the recent convention of the Ohio Women's Auxiliary

Left to right: Mrs. A. H. Laas and Mrs. L. R. Schmaus, both of Milwaukee; Mrs. H. J. Smith and Mrs. J. A. Murphy, both of Racine. Photo taken at the convention of the Wisconsin Women's Auxiliary.

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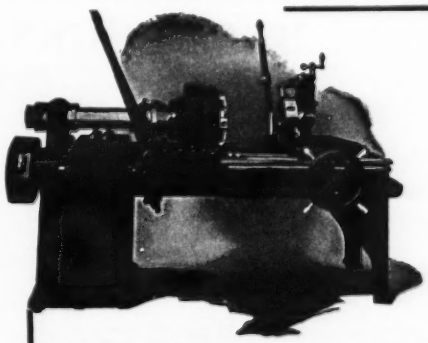

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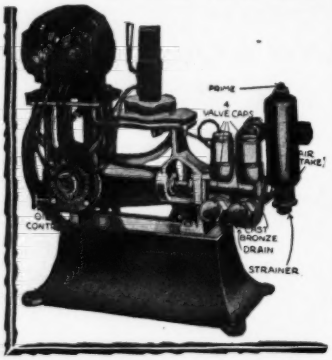

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in Springfield. The installation of officers and luncheon will occur at the next meeting, which will be held at the Cincinnati Club, with Mrs. George Doench as chairman. Those assisting this capable leader will be Mrs. George Ammon, Mrs. Robert Carroll and Miss Alma Niesen. The meeting was well attended, and auxiliary members are looking forward to an active year under the leadership of the new president, Mrs. A. J. Murphy.

Moline Rock Island Auxiliary Meets

The Women's Auxiliary to the Rock Island and Moline (Ill.) Master Plumbers' Association holds its meetings on the second Monday in each month. Mrs. Charles O. Stange, 1107 Fourth avenue, Moline, was elected president for 1930, to succeed Mrs. Charles C. Rosenfield of Rock Island. The last meeting was held on February 10.

Portland, Ore., Auxiliary to Hold Party

Members of the Portland, Ore., Women's Auxiliary are to be hostesses to the local master plumbers association at a party to be held this evening, February 22, at Riverview hall. The proceeds of the entertainment are to go to the scholarship loan fund, stated Mrs. L. A. Beard, president of the auxiliary. Arrangements for the event were in charge of Mrs. George Kendall, Mrs. Orlo Kendall and Mrs. R. D. Rennie.

The January luncheon-meeting of the auxiliary was held at the home of Mrs. J. R. Widmer. The annual meeting and election of officers was held February 12, Mrs. T. W. Rowe acting as hostess. Among plans projected for the coming twelve months is an aggressive membership campaign, work on which will be started in March.

Jersey City Auxiliary Installs Officers

The Women's Auxiliary of Jersey City, N. J., recently elected new officers, and the installation took place at the auxiliary's meeting rooms at Lincoln Hall on Lincoln street, Jersey City, on Wednesday, February 5. Mrs. William T. J. Orriss, president of the New Jersey State Auxiliary, and Mrs. Charles Zimmerman, state secretary, were the installing officers, and with their husbands journeyed from Union City, N. J., to be guests of the Jersey City Auxiliary for the evening. Many of the master plumbers attended. A buffet supper was served and dancing was enjoyed until a late hour. The newly installed officers are: President, Mrs. Louis Kull; vice-president, Mrs. William Mulholland; treasurer, Mrs. Louis Komoski; secretary, Mrs. Joseph Reilly; sergeant at arms, Mrs. J. T. Edge. The trustees are: Mrs. John Sharrock, Mrs. Harry Sharrock and Mrs. Robert Gilligan. Mrs. John J. Corcoran is publicity chairman.

Columbus Auxiliary Meets

The Ladies' Auxiliary of Columbus, Ohio, has been very busy holding meetings the second Wednesday of each month, with a regular attendance. The meeting for February was held at the home of Mrs. Bert McDonald, 1208 North Fifth street. Mrs. William Schneider, a delegate to the Springfield, Ohio, convention, gave a most interesting report. The ladies are to be entertained with a dinner and card party on the evening of Thursday, March 13. The affair will be sponsored by the master plumbers' association, and will be held in the I. O. O. F. Hall. This is an annual affair and is always anticipated with much pleasure. Refreshments were served by the hostess.

Newton Auxiliary Holds Meeting

The Women's Auxiliary of Newton, Mass., held its regular meeting on Wednesday, February 12, at the home of Mrs. Fred Warren, 205 Lowell street, Waltham, Mass. After a lengthy business meeting, bridge was played, honors going to Mrs. Ryan, Mrs. Kerr and Mrs. Whitney.

New Business Ventures

Tucson, Ariz.—The Cox & Stevenson Plumbing & Heating Co. has been incorporated with a capital stock of $100,000, by O. T. Richey and Tom K. Richey.

Klamath Falls, Ore.—S. L. Waters and W. E. Gruenhagen have engaged in the plumbing and heating business at 707 South Sixth street.

Pomona, Calif.—The California Hardware & Plumbing Supply Co. is the name of a new partnership established at 354 West Second street, by Norris H. Wilkinson and Carroll J. Wilkinson.

Hoboken, N. J.—The Reliable Plumbing and Heating Co. has been organized and incorporated, with a capital of 1,000 shares of no par common stock, to establish and operate a plumbing and heating contracting business. Samuel L. Hirschberg, West New York, N. J., represents the new firm.

Canton, Ohio—The Standard Plumbing and Heating Co. has been organized and incorporated, with a capital of $50,000, by Black McCluskey and associates. The new concern is represented by Ruff and Souers, 1200 Harter Bank building, Canton.

Brooklyn, N. Y.—The Cleveland Plumbing and Heating Engineers, Inc., has been chartered, with a capital of $10,000, to establish and operate a plumbing and heating contracting business in the Cleveland avenue section of that city. Representing the new concern is I. Feinstein, 551 Fifth avenue, New York.

Brooklyn, N. Y.—Frank J. Weisman, 1718 Decatur street, and associates, have organized and incorporated the Frank J. Weisman Co., with a capital of $10,000 to establish and operate a plumbing contracting business.

Brooklyn, N. Y.—Gillman and Gertler, Inc., has been organized with a capital of $1,000, to establish a plumbing and heating contracting business. Greenberg and Fuchs, 2 Lafayette street, New York City, represent the new concern.

Newark, N. J.—The Charles Kreiger Plumbing Co. has been organized and incorporated, with a capital of $20,000, to engage in the plumbing contracting business. Charles F. Krieger is president of the new concern, which is represented by Braelow and Lepper.

Madison, Wis.—The R. C. Jepertinger Corp. has been formed with 100 shares of common stock at no par value, to operate a plumbing and ventilating business. R. Jepertinger, John Jepertinger and H. Jepertinger are the incorporators.

Kenosha, Wis.—The Kaelber Plumbing & Heating Co. has been organized to conduct a plumbing and heating contracting business, with a capital of 750 shares at $100 each. The incorporators include: Christian A. Kaelber, E. Kaelber and F. Kaelber.

Tampa, Fla.—The Collins Plumbing Co., Inc., has been organized and incorporated with a capital of $5,000, to engage in the plumbing contracting business. W. A. Collins, E. B. Collins and J. E. Bates are the incorporators.

Sarasota, Fla.—The Bonnell Plumbing Co., Inc., has been organized and incorporated with a capital of $5,000, by H. S. Bonnell, B. J. Britton and C. Britton.

Cleveland, O.—The William H. Buy Plumbing Co. has been organized with a capitalization of 100 shares of no par value stock, by W. H. Buy, Emma A. Buy and Jay G. Short.

Chicago, Ill.—The Blackstone Plumbing and Heating Co. has been organized and incorporated by Ethel Born-

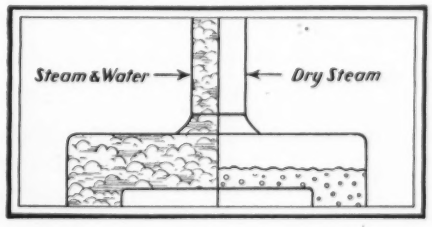
When
boilers throw water
YOU
get the blame

WHEN an angry owner calls you to tell you that one of your boiler installations has thrown water, ruining rugs, floors and furniture, it is usually not your fault, or the fault of the boiler either. But you get the blame. Now science gives you protection against this nuisance.

NOFOME

The product that ends boiler foaming and priming forever

absolutely stops and prevents boiler foaming whether in an old or new installation. When the boiler foams the cause is a chemical reaction in the water. And this reaction cannot take place when No Fome is used. The diagram below shows how No Fome instantly stops foaming.



Order NoFome through your jobber, or direct from us, sending your jobber's name so that we can bill through him.

FEDERATED LABORATORIES, INC.
229 East 38th Street, New York City
© F. L. Inc. 1930

stein, Mary Playf and A. Blackstone, with a capitalization of $20,000, to engage in the plumbing and heating business. The new firm is represented by Golden and Golden, 100 West Monroe street, Chicago.

Montreal, Que.—The Montreal Plumbing and Heating Co. has been organized and incorporated under provincial charter, with a capital of $20,000, to engage in the plumbing and heating contracting business.

Parkersburg, W. Va.—The Nelson Plumbing Co. has been organized and incorporated with a capital of $50,000, by W. H. Nelson, N. R. Nelson, A. L. Nelson, M. G. Nelson and H. L. Green, to engage in the plumbing contracting business.

Chicago, Ill.—The Thomas H. Litvin Plumbing Co., 3308 Armitage avenue, has been organized and incorporated with a capital of $20,000, by F. Litvin, Theresa Litvin and Thomas H. Litvin, to engage in the plumbing contracting business.

Twin City, La.—The Standard Plumbing & Heating Co., Inc., has been organized and incorporated with a capital stock of $10,500, as a result of the consolidation of the Frank McClelland and C. V. Teegerstrom plumbing companies. T. K. Currie is secretary-treasurer.

Brooklyn, N. Y.—The Allocca Plumbing and Heating Corp. has been organized and incorporated, to establish and operate a plumbing and heating contracting business. The new concern is represented by Rubinton and Coleman, 32 Court street.

Riverhead, N. Y.—A. L. Swezey and associates, have organized and incorporated the Swezey Heating Co., with a capital of $10,000, to establish and operate a local heating, engineering and contracting business. The new firm is represented by G. W. Hildreth, local attorney.

Business Changes

San Saba, Tex.—The Dawson Plumbing Shop has moved from the Model Filling station on Wallace street to the building formerly occupied by J. M. Gunter on the Pecan Belt highway.

Atlanta, Ga.—C. B. Boatenreiter Co., plumbing and heating contractor, announces the removal of its offices from 1016 Atlanta Trust building, to 401 Southeastern Trust building, Atlanta. The new location will afford three times as much room as the old quarters and is situated adjacent to the general offices of the Master Plumbers' Association of Atlanta. Charles B. Boatenreiter and John B. Goodman are owners of the company.

El Paso, Tex.—N. E. Nations and E. C. Smith have sold their interest in the Texas Plumbing Co. to C. E. McCue, who will continue the business under the same name. Mr. Nations and Mr. Smith will open at another place.

Yakima, Wash.—The Drinkwater Plumbing & Heating Co., 1109 West Yakima avenue, has sold its plumbing and heating business to W. H. Whitson, who will continue under the name of Whitson Plumbing & Heating Co.

Boston, Mass.—Rideout, Chandler & Joyce, heating and power piping contractors, have recently removed their offices from 178 High street to 138 Broad street.

San Francisco, Cal.—Louis Bernstein has moved his plumbing and heating shop from 1114 to 1150 Buchanan street.

Utica, N. Y.—W. E. Stradling has been named president and secretary of the Stradling Plumbing and Heating Co., Inc. Other officers elected are W. C. Ballda, vice president and treasurer and W. L. Putnam, assistant treasurer.

ENDURING COPPER ~
RIVERSIDE
COPPER
RANGE
BOILERS
Rust or corrosion and copper don't go together. That's why Riverside uses only the best copper in the manufacture of Riverside Range Boilers.
When you install a Riverside, you're through with the job. No complaints and never a replacement.
Order Riversides thru your jobber.
RIVERSIDE BOILER WORKS, INC.
CAMBRIDGE
MASS.

New Trade Literature

"Comfort by Wire"

"Comfort by Wire" is the title of a folder being distributed by Automatic Electric Steam Corp., of New York City. The folder describes an automatic electric steam radiator, controlled by a thermostat. An automatic safety control for this radiator is also described. Both cast iron and light weight brass types are illustrated. The folder also gives data for determining the required radiation.

Circular of Borden Co.

Borden Co., of Warren, Ohio, is sending out a circular describing its 1- to 2-inch die stocks. A self-contained type with no loose parts, and a "four-post" type, using a separate set of dies for each size of pipe, are illustrated. Various parts of the die-stocks are shown, and specifications for ordering are given.

Catalog of Hoffman Specialty Co., Inc.

Hoffman Specialty Co., Inc., of Waterbury, Conn., has just issued a fifty-seven page catalog describing its heating equipment. Part One is devoted to valves and controlled heat equipment. Technical description is given of the operation of one-pipe gravity steam systems and one-pipe gravity vacuum systems. Several pages of diagrams show typical installation details. Part Two describes pumps —vacuum, condensation, reciprocating, underground, and air line. Dimension diagrams, tables of capacities and suggested specifications are given in this section. The third section contains information about the company's moto-heaters, with diagrams, tables and technical data.

"The Modernization of an Ancient Industry"

"The Modernization of an Ancient Industry" is the title of a booklet just issued by The Cast Iron Pipe Research Association, of Chicago. The booklet contains sixteen pages, 11 by 13½ inches. Seven full page illustrations show actual foundry scenes, and smaller illustrations with descriptive matter are given on the other pages. The illustrations were drawn by the industrial artist, Otto Kuhler. "Charging a Cupola," "Hand Ramming a Big One," "Pouring the Pipe," "Removing the Core Bars," are subjects of some of the drawings.

Ohio Brass Co.'s Envelope Stuffer

Ohio Brass Co., of Mansfield, Ohio, is distributing an envelope stuffer describing its composition disc globe valve. "Save Time and Money" is the caption on the folder. Several styles of valves are illustrated in colors.

"Oxwelded Construction for Modern Piping Services"

A book entitled "Oxwelded Construction for Modern Piping Services" has just been prepared by The Linde Air Products Co., New York City. It is a rather complete presentation of facts pertinent to, and advantages of, the oxy-acetylene process for the fabrication of steel and wrought iron piping systems for all purposes. Eight chapters comprise the book. The first three of these are general in character and the remaining five apply to particular fields of piping construction. It should be of interest to all those contemplating the installation of steel or wrought iron piping.

Catalog of Excelso Products Corp.

Excelso Products Corp., of Buffalo, N. Y., has just published a new catalog reference book. This catalog gives the story of indirect heating, and also shows twelve diagrams of practical installations. Besides the material on direct water heating, the catalog also contains hot water fixture data, tank capacities, and a table of sizes of the concern's direct and indirect heaters.

Water Softener

specifications are best met by using

Zeolite Upflow Softeners

The economical and efficient method of producing soft water.

PARAMOUNT WATER SOFTENER CORPORATION

91 West St. New York

A FEW DOLLARS MORE

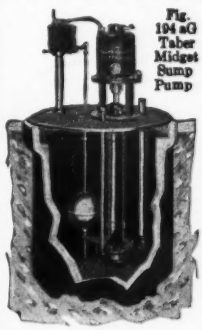


Fig. 194 aG Taber Midget Sump Pump

YOU sell, or ought to sell, satisfactory cellar drainage . . . protection from water damage to merchandise or goods stored in the basement . . . when you sell a sump pump installation.

Why permit a few dollars to stand in the way of 25 years of satisfactory service rendered by the Taber Midget Sump Pump? Write for description and prices. See page 923, Domestic Engineering Plumbing and Heating Catalog.

TABER

TABER PUMP CO. Est 1859

290 Elm Street, Buffalo, New York

Gerstein & Cooper

Many of the leading manufacturers use Gerstein & Cooper genuine copper tanks for their water heaters. Let us send you complete information concerning Gerstein & Cooper Copper Range Boilers.

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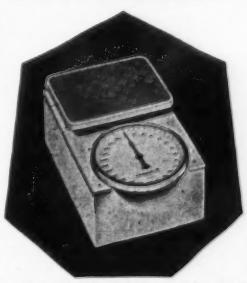
1 West Third St. So. Boston, Mass.

New York Office: 166 W. 72nd St.

Canadian Agents: G. Mason Price, 832 St. James St., Montreal, Quebec, Canada

In colors to harmonize

with modern bath rooms



HANSON WEIGH MASTER

BATH ROOM SCALES

You always make more money on Hanson Scales. Send for literature.

HANSON SCALE COMPANY, 546 N. Ada St. Chicago

THERMOLATOR

Look at the Fire
Thermolator
cuts coal bills-handles your heater

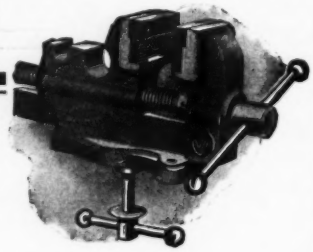
THERMOLATOR is opening new profit fields for the Heating Contractor. Why? Because it is a product whose fundamentals are really common factors in his legitimate business. Coal must have and is entitled to special equipment to make it completely satisfactory as a fuel.

Thermolator does for coal what the special burner does for oil or gas. Increases efficiency—cuts the cost—reduces trouble.

For use on any heating system.

THERMOLATOR CORPORATION
Allentown Penna.

VANDERMAN



Combination
Bench
Pipe
Vise

Steel Tool Chest

The Vanderman Pipe Vise will handle all work from one-eighth to ten inches. It is equipped with removable jaws. Quickest and best work with Vanderman.

Buy a Vanderman Steel Tool Chest and keep your tools safe from damage. Available in a variety of sizes or made to your specifications.

Write for particulars

The
Vanderman
Mfg. Co.
Willimantic,
Connecticut

Pipelines
Connected by LYT

A FEW SHOTS FROM THE PRESS

This foreign gentleman who says Americans have no imagination ought to see some of the gals the newspaper reporters describe as beautiful bootleg queens and lovely flapper bandits.—Macon Telegraph.

A Missouri man is accused of punishing his children by giving them severe electric shocks which, of course, is just the modern way of applying the switch.—New York Evening Post.

The New York policemen have added two airplanes to their equipment, but we don't see how that's going to help them with the underworld.—Sanford (Fla.) Herald.

"If you want to live long," says a doctor, "do as much walking as possible." Unfortunately, the coroners' courts don't support his theory.—Passing Show, London.

"The modern girl is not at all shocking or indiscreet," says a bishop. This sort of statement is terribly discouraging to the modern girl.—Punch.

A skeptic declares that when he attended a seance all he heard was chuckles. He must have struck a very happy medium.—Punch.

A writer asks whether women have a sense of humor. Undoubtedly; look at the men some of them marry.—Punch.

LIMERICK

There was a young girl named O'Neill,
Who went up on a big ferris wheel;
But when half-way around,
She looked at the ground,
And lost an eighty-cent meal.

P. G. N., Chicago.

MAKING SURE

Mistress: Clematis, I think I smell something burning downstairs. Did you remember to turn off the electric iron when you left the ironing-board, as I told you?

Clematis: Yes'm, Ah did. Ah mos' surely did. Ah pulled dat chain once, lak you tol' me, den I pull it again, to make sure.

The little girl was attending church services for the first time. She was amazed to see everybody kneel suddenly. She asked her mother what they were going to do. "Hush," her mother replied, "they're going to say their prayers." "What? with all their clothes on?"

KOPPERS NEWS.

IT PAYS TO ADVERTISE—LATEST VERSION

A lion met a tiger
As they drew beside a pool,
Said the tiger, "Tell me why
You're roaring like a fool?"

"That's not foolish," said the lion,
With a twinkle in his eyes,
"They call me king of all beasts
Because I advertise."

A rabbit heard them talking
And ran home like a streak;
He thought he'd try the lion's plan,
But his roar was a squeak.

A fox came to investigate—
Had luncheon in the woods,
So when you advertise, my friend,
Be sure you've got the goods.

LYT.

Bath a Day Movement

We have received, in the months since the schoolyear opened, a great many requests from school teachers for copies of "The Story of the Bath." As usual, a complimentary copy has been sent to each teacher, and the inquiry has been referred to the local association, where there was one; if not, to the state association. Ask your secretary if he has an inquiry from your town; or write us. In 171 *cities and towns "The Story of the Bath" has been used as supplementary reading in the class rooms and from this use of the booklet has come much good publicity for the plumbing fraternity. Find out whether or not there is an inquiry awaiting attention from your community.*

171

Another use, which has become popular in the last year or two, has been to give copies out to members of Kiwanis, Rotary, Lions, and other such civic clubs, on the day set aside for the plumber member. In this way, not only does the plumber member (he may, of course, be a member of a local wholesale house) have an opportunity to explain just how plumbing fits into modern life, but he has an opportunity to make his message last by giving each man present a copy of this fascinating little booklet.

However it is used, "The Story of the Bath" represents the very finest message which has ever been prepared to put the plumber in the position he deserves in his community. If you've never read the booklet, write for a copy. You have a treat in store for you—and you'll probably want to use it to promote your business.

Epigrams—For Your Use

Men who court trouble soon find themselves married to it.

* * *

Heaven never helps the man who is a victim of that tired feeling.

* * *

A matchless story is one that ends without a wedding.

* * *

No amount of culture will make a man stop snoring in his sleep.

* * *

Hearts may be trumps in the game of love, but it helps some to flash a diamond occasionally.

* * *

The chap at the little end of the horn always manages to make himself heard.

* * *

A man wastes a lot of valuable time by feeling in the wrong pocket.

* * *

Make haste slowly—except when you are trying to catch a train.

* * *

How we would be disliked if we told the truth on all occasions!

* * *

Some financiers work wonders and some merely work suckers.

* * *

You can't afford to roast people; it costs too much for fuel.

* * *

No man with the toothache can enjoy great riches.

BRASS NIPPLES

READING BRAND

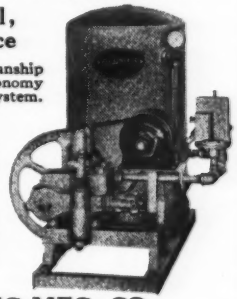
The use of Reading Brand Brass Pipe Nipples gives you an added margin of safety on all installations. After using them once you KNOW that every one of them is of the highest quality.

Ask your jobber to supply you or write direct to us.

H. W. HUNT COMPANY
READING :: MASSACHUSETTS

THE HOOSIER

For More Economical, Dependable Water Service



Precision, simplicity and quality workmanship and materials insure longer life, greater economy and dependability in the Hoosier Water System. The Hoosier requires no attention. It runs quietly, year after year, with negligible operating and maintenance costs. And it is permanently protected, *inside and out* by the famous GalVAZink Process.

Let us show you why it pays to specify the Hoosier. We will gladly send complete information, and explain the advantages of our exclusive sales franchise now available in many territories. Write us TODAY.

FLINT & WALLING MFG. CO.
76 Oak Street - - - KENDALLVILLE, IND.

Use "Always Reliable" For Dependability

No. 40 Pump
No. 39 Bulb
Covered by Patents

This line of furnaces and torches includes improved models especially designed for the Plumbing Trade. Their thorough dependability at all times and under all conditions, is adding daily to the growing popularity of the "ALWAYS RELIABLE" line.
Order through your distributor who will give you prompt service and satisfactory prices.
Also specify for "ALWAYS RELIABLE" plumbers' tools.

OTTO BERNZ CO., INC.
NEWARK, NEW JERSEY
Established 1876

IMPROVED
WILHELMI
BOILERS

Where the strain is hardest is where the Improved Wilhelmi Copper Range Boiler is strongest. Top and bottom are re-inforced by the special Wilhelmi process.

Write for full particulars

HAYES MFG. CO., Makers
PATERSON NEW JERSEY

Let
dealers tell why you can make more money selling
WILLIAMS
OIL-O-MATIC
fuel oil burners

A recent "Domestic Engineering" article said, "The best reason why plumbing and heating contractors should handle oil burners is the experience of those who are. A Richmond dealer said, 'We investigated the field before taking any agency. In 1923 only one burner had been installed here, so we went to Norfolk and Washington and interviewed owners of all kinds of burners. We decided to represent Williams Oil-O-Matic—and we still do. We have installed two hundred burners. We get a good price for our installations and have never, under any circumstances, cut our price to meet competition.'"

You, too, can make more money selling the automatic fuel oil burners more people buy. Williams Oil-O-Matic burners are heating far more homes than any other make! Now, with a new lower priced Oil-O-Matic Junior for medium sized homes even more sales, more profits, are open to you. Write for all the facts about patented Williams devices which permit the use of fuel oil which costs less per gallon and gives more heat. Ask for details on this new Williams Oil-O-Matic franchise — most valuable in the industry.

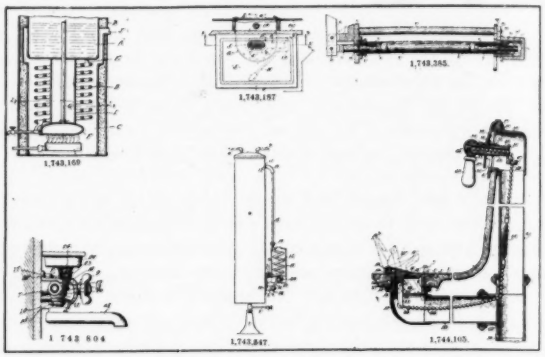
WILLIAMS OIL-O-MATIC HEATING

WILLIAMS OIL-O-MATIC HEATING CORP.
BLOOMINGTON, ILLINOIS

PATENTS
Plumbing Department

1,743,169. Water Heater. Joseph C. Ureel, Detroit, Mich.

1,743,187. Combination Sink and Garbage-Disposal Means. Edward A. Buckman, Los Angeles, Calif.



1,743,385. Thermostat. Howard W. Partlow, Utica, N. Y.

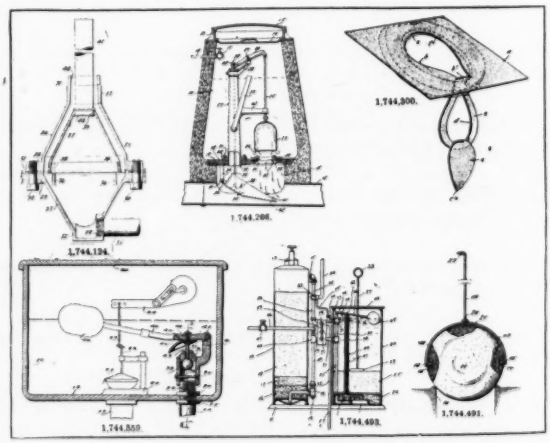
1,743,547. Fitting for Water-Heating Apparatus. Lawrence B. Houlihan, Pittsburgh, Pa.

1,743,804. Mixing Faucet Fixture. Nathan August, Jr., Newark, N. J.

1,744,105. Trip-Lever Bath Waste Mechanism. Kent S. Clow, Lake Forest, and John A. Byers, Evanston, Ill., assignors to James B. Clow & Sons, Chicago, Ill., a Corporation of Illinois.

1,744,124. Hot-Water Heater. John H. Kolts, Crafton, and Edward A. Krah, Jr., Pittsburgh, Pa., assignors to Pittsburg Water Heater Company, Pittsburgh, Pa., a Corporation of New Jersey.

1,744,266. Sewer-Flushing Device. Roy C. Halyburton, Los Angeles, Calif., assignor to Charles R. Lion, Los Angeles, Calif.



1,744,300. Sanitary Toilet-Seat Cover. Hal Dewaide, Portland, Oreg.

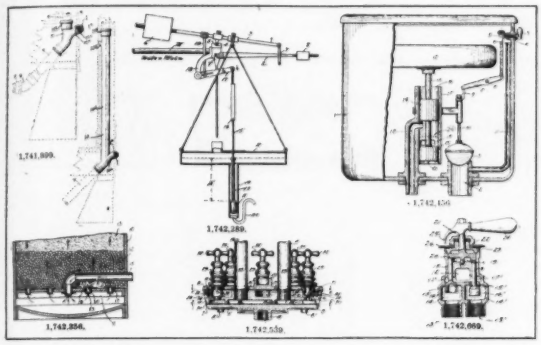
1,744,491. Valve for Flush Tanks. George B. Mullen, Bayside, N. Y.

1,744,493. Semiautomatic Water Softener. Leo D. Nix, Indianapolis, Ind., assignor to Puritan Engineering Corporation, Crawfordsville, Ind.

1,744,559. Valve Mechanism for Flush Tanks. Wil-

liam S. Locke, Portland, Oreg., assignor of one-half to Portland Realty and Trust Co., Portland, Oreg., a Corporation of Oregon.

1,741,899. Combined Eighth Bend and Clean-Out Pipe Fitting. Gustave C. Zuckweiler, San Diego, Calif.



1,742,289. Flush-water Regulator. John R. Smith, Los Angeles, Calif.

1,742,356. Water Softener. John A. Johnson, Crawfordsville, Ind., assignor to Johnson Manufacturing Company, Crawfordsville, Ind.

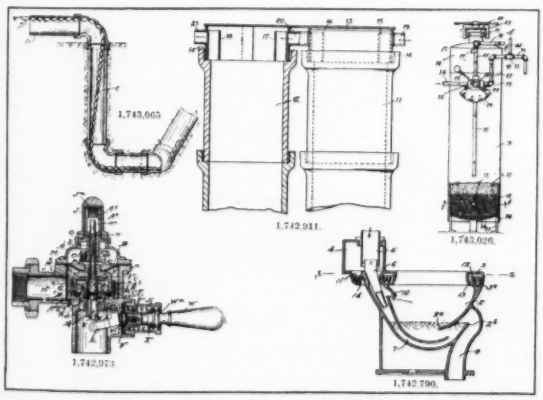
1,742,456. Balanced Flow-Control Device. Leroy A. Wilson, Salt Lake City, Utah.

1,742,539. Water-Tempering Sectional Spray Head. Herman E. Heine, Milwaukee, Wis., assignor to Bradley Wash-Fountain Company, Milwaukee, Wis., a Corporation of Wisconsin.

1,742,669. Duplex Faucet. James C. Ross, Seattle, Wash.

1,742,790. Silent Jet, Air-Venting, Refill Toilet Bowl. John R. Smith, Los Angeles, Calif.

1,742,911. Septic-Tank Structure. Irwin Gutman and George E. Evans, Pittsburgh, Pa.



1,742,973. Flushing Valve. Frederick A. Schossow, Detroit, Mich.

1,743,026. Water Softener. Lee G. Daniels, Rockford, Ill.

1,743,065. Drain Opener. Michael B. Smith, St. Louis, Mo.

1,738,956. Process of Hardening Alberene Stone. Paul Mahler, New York, N. Y., assignor to Alberene Stone Co., New York, N. Y., a Corporation of New York. A process of hardening a piece of natural stone of the soapstone type containing a group of silicates and water of composition consisting in subjecting the piece of stone to a temperature only sufficiently high to volatilize the water of composition of the group of silicates, and then main-

CENTRAL
STEEL PIPE
"Tested strength in every length"
A dependable PIPE FOR dependable PLUMBERS
CENTRAL TUBE CO.
GENERAL OFFICES
FIRST NATIONAL BANK BLDG.
PITTSBURGH

HESSLER
ROOF
FLANGES

Hammer the Hessler into place with a few quick blows. No cutting, no caulking, fitting or soldering to do on the job.

Save time and money. Ask your jobber today for a Hessler Roof Flashing.

Ask Your Jobber

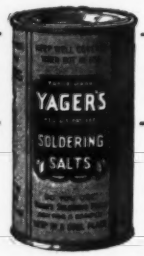
H. E. HESSLER CO., SYRACUSE, N. Y.

HAYDENVILLE *and* QUALITY BRASS AND IRON GOODS ARE SYNONYMOUS

Say "HAYDENVILLE" to your jobber.

THE HAYDENVILLE COMPANY, HAYDENVILLE, MASS.

For All Lead Work



After you get used to the easy job Yager's Soldering Salts makes of any lead work you'll never be without it.

Write for sample can. Address Dept. "D".

ALEX R. BENSON CO., Inc., Hudson, New York

For list of distributors see 1930 McRae Blue Book.

Sales Agency for Canada:
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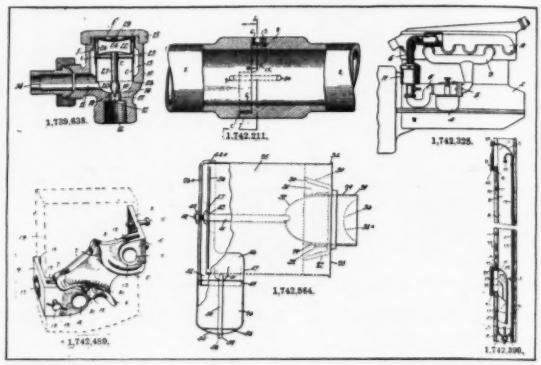
taining the said temperature practically constant until substantially all the water of composition of the said group of silicates is volatilized.

Heating Department

1,739,638. Valve Unit for Steam Traps. Charles H. Jockmus, Ansonia, Conn.



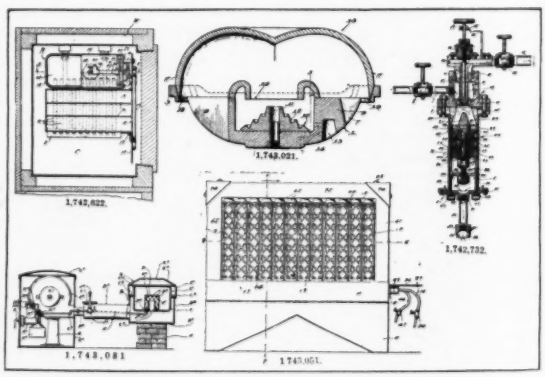
1,742,211. Pipe Joint. John Lally, Flushing, N. Y.; John Lally, Joseph A. Henley, and Ellen T. Lally, executors of said John Lally, deceased, assignors to Lally Column Co., Cambridge, Mass., a Corporation of Massachusetts.

1,742,489. Pipe-Bending Device. John Sundgren, Duluth, Minn.

1,742,325. Air-Conditioning Device. Ernest J. Sweetland, Montclair, N. J.

1,742,390. Humidifying Device. Daniel Handelan, Minneapolis, Minn.

1,742,564. Air Cleaner. Caleb E. Summers, Dayton, Ohio, assignor to General Motors Research Corporation, Dayton, Ohio, a Corporation of Delaware.



1,742,622. Refrigerating Apparatus. Alfred Morris Thomson, Newark, N. J., assignor to Joseph Mercadante, New York, N. Y.

1,742,732. Oil Burner. Carl A. Stenvig, Bellingham, Wash.

1,743,051. Oil-Burning Process. Charles Vivion Stuart, Oklahoma City, Okla.

1,743,081. Oil-Burning Apparatus. James L. Breese, Jr., Chicago, Ill., assignor to Oil Devices Corporation, Chicago, Ill., a Corporation of Illinois.

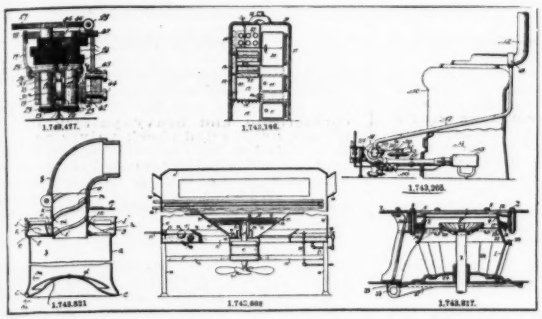
1,743,021. Oil Burner. William H. Boston and Cecil E. Boston, Winnebago, Minn.

1,743,668. Humidifier. William B. Hodge, Charlotte, N. C.

1,743,617. Combination Gas and Oilburner. Ernest

H. Peabody, Pelham Manor, N. Y., assignor to Peabody Engineering Corporation, New York, N. Y.

1,743,205. Means for Burning Liquid Fuel in Furnaces for Heating Buildings. Albert B. Frenier, Chicago, Ill., assignor by mesne assignments, to Petroleum Heat and Power Company, New York, N. Y.



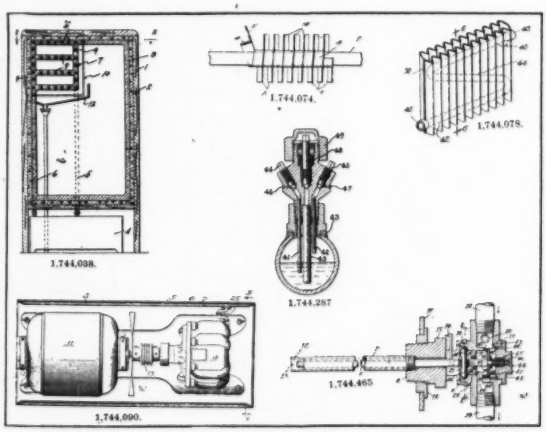
1,743,146. Steam Boiler. Edwin A. Kingsley, Rutherford, N. J.

1,743,477. Seaming Tool for Pipe Joints. Albert G. Perkins, Buffalo, N. Y.

1,743,521. Air Cleaner. Arthur A. Bull, Detroit, Mich.

1,744,287. Refrigerating Apparatus. Raymond W. Tibbetts, Methuen, Mass., assignor to Frigidaire Corporation, Dayton, Ohio, a Corporation of Delaware.

1,744,090. Mounting for Refrigerating Apparatus. William Wishart, Beloit, Wis., assignor to National Refrigeration Corporation, Beloit, Wis.



1,744,078. Radiator. Thomas E. Murray, Brooklyn, N. Y.; Joseph Bradley Murray, Thomas E. Murray, Jr., and John F. Murray, executors of said Thomas E. Murray.

1,744,074. Radiator Unit. James E. Gortner, Shamokin, Pa.

1,744,038. Refrigerating Unit. Lloyd G. Copeman, Flint, Mich., assignor to Copeman Laboratories Company.

1,744,465. Thermostat. John H. Grayson, Lynwood, Calif., assignor to Grayson Heat Control, Inc., Lynwood.

1,743,615. Soldering Process. John H. Nead, Earl R. Wehr, and Carl C. Mahlie, Middletown, Ohio, assignors to The American Rolling Mill Company, Middletown, Ohio, a Corporation of Ohio. The process for soldering metal articles having a coating of zinc-aluminum alloy, in which the aluminum is above ½ of 1 per cent, which consists in applying a solution of strongly alkaline nature to the surfaces to be soldered, preparatory to soldering and without heating the said surfaces and then applying flux and solder in the usual manner.

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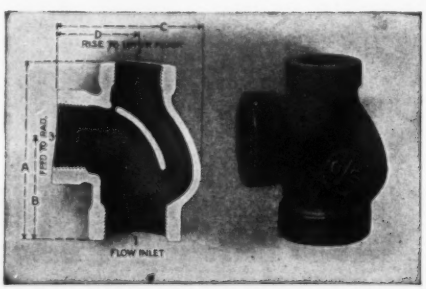

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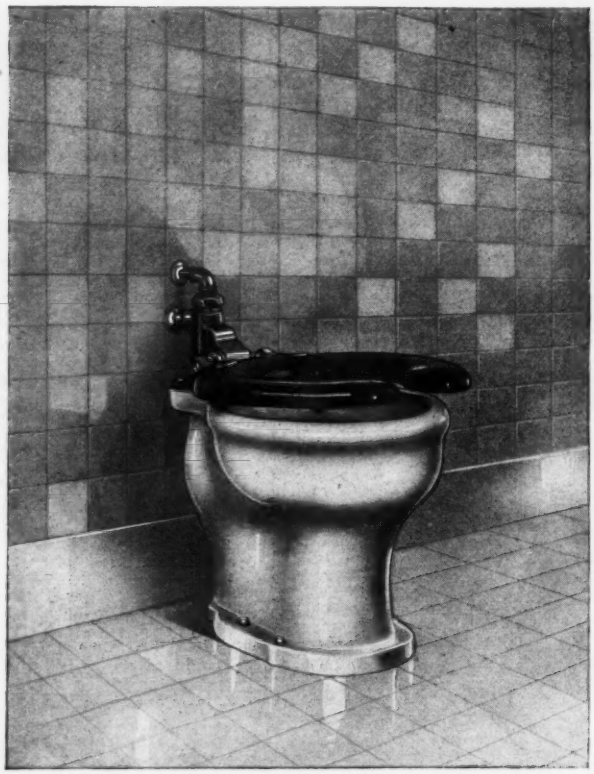

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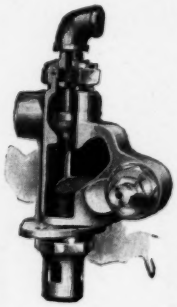

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